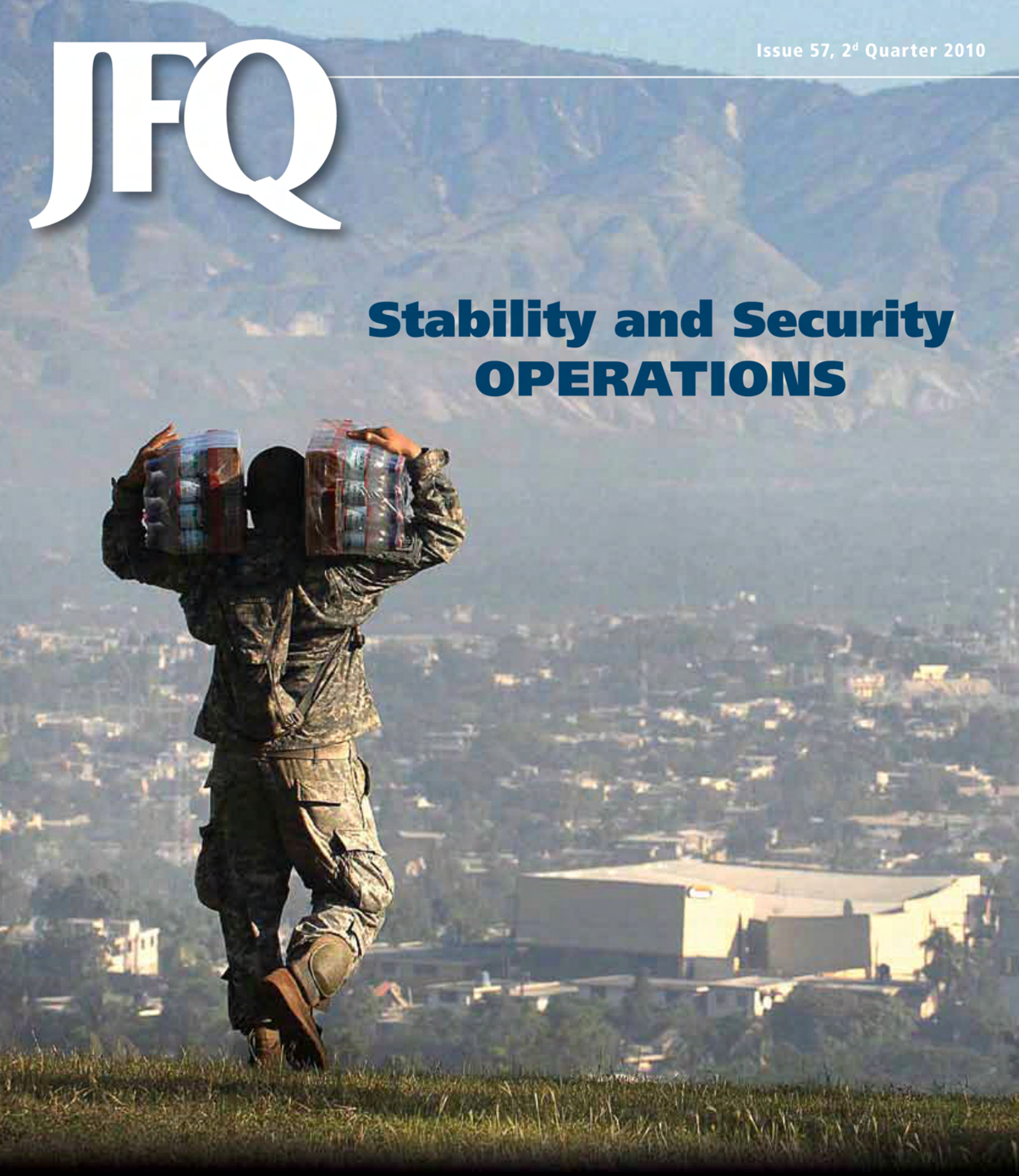
Issue 57, 2d Quarter 2010

JFQ

Stability and Security OPERATIONS



DOD's Energy Challenge

Russia's Arctic Strategy

JOINT FORCE QUARTERLY

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The Accidental Strategist

By JOHN M. COLLINS

I wouldn't be the person I am today, I wouldn't be where I am now, and I may not even have been here if it wasn't for the accident.

—Rick Allen, drummer for Def Leppard

Joint Force Quarterly has devoted a great deal of ink to strategy and strategists in recent issues. This has occurred against a background of evolving allied strategies in South Asia as well as academic criticism of the quality of strategic thought in the U.S. Armed Forces. Strategists might be born, but it is indisputable that they can be trained. Pure serendipity introduced me to the field four decades ago, and strategy has retained my attention ever since. My introductory experiences in the field led to unforeseeable opportunities and ultimately to four imperishable lessons precipitating career-shaping advice for aspiring strategists today.

Introduction to Strategy

Immediately before I left for Vietnam in June 1967, I told the National War College (NWC) deputy commandant, "You need me," and he countered, "We need you like we need another thumb." Fortunately for me, someone on the faculty must have died because subsequent orders made me a faculty member when the next class convened in August 1968.

It had been many years since a military faculty member had delivered a formal lecture at the War College when Army Lieutenant General John E. Kelly, the commandant, for reasons that remain obscure, invited me to compare Arab military capabilities with those of Israel soon after my arrival in 1968—perhaps because I had attended a summer seminar at American University Beirut 16 years before as an Army captain.

I offer a few snippets from that presentation so you can sample its flavor.

Thirteen centuries ago a handful of wild-eyed Bedouin boiled out of central Arabia on their way to immortality. Within 9 years of the Prophet's death, this rag-tag mob destroyed the 1,200-year-old Persian Empire and drove Byzantium to its knees, a feat roughly equivalent to the simultaneous defeat of the United States and Soviet Union by the Students for a Democratic Society. They accomplished that miracle without experienced generals or logistical support, but spilled over into the Punjab, swept all of North Africa, and battered the gates of Western Europe until Charles Martel stemmed the tide at Tours in 732 AD.

Fast forward to 1948, when tiny Israel, armed mainly with a John L. Sullivan complex, stymied all Arab states, who had lost their martial spirit and sense of cohesion. Arrogant Israelis, like the Boston Strongboy, still offer to whip any sonofabitch in the house, and from the looks of Arab opposition, they can do it. How did they get that way? Let's first see where they spawned their key leaders, starting with Orde Wingate, a latter-day Gideon with a talent for unconventional warfare to whom the Lord said, "Go in this, thy might, and thou shalt save Israel." His disciples included Moshe Dayan, then–Chief of Israel Defense Forces, who admitted that Wingate "taught me and many another Israeli Soldier everything we know."

strategists might be born, but it is indisputable that they can be trained

And so it went. Smitten by my presentation, General Kelly stated, "You now are Director of Military Strategy Studies." My response was, "Sir, I can't even spell strategy," to which he replied, "Neither can anyone else. Go make a name for yourself." That challenge changed the rest of my life.[1]

Initial Strategic Experiences

My first NWC military strategy syllabus taught me more than it taught students because, unlike any other course director, I wrote a brief introduction to each of the 19 topics, then posed a series of questions to guide intellectual investigations. The table of contents opened with the fundamentals of military strategy and nature of modern war across the board, followed by threats, military strategies during the incumbent Nixon administration, implementing force postures, and a quick look at the impact of science and technology. A comprehensive assessment capped the course. The second edition of that compilation totaled 165 pages, plus a 19-page bibliography.

I began to expand my syllabus into a primer entitled *Strategy for Beginners* while still an NWC faculty member. That product received nine rejection slips before the U.S. Naval Institute Press finally published it under the bogus title *Grand Strategy: Principles and Practices*. The dust cover crowed, "This is the only book on grand strategy. Liddell Hart's classic *Strategy* contains a seven-page chapter on the subject. Most texts ignore it entirely." The *Economist* in London wryly remarked that if nobody had previously written a book about grand strategy, neither had I. That conclusion, of course, was correct because *Grand Strategy* barely nodded at political, economic, social, and psychological ramifications, but rave reviews nevertheless poured in from home and abroad.

Subsequent Sidetracks

At age 51, I shed the uniform of an Army colonel on Friday, May 31, 1972, and the following Monday reported for duty with

John M. Collins is a retired U.S. Army colonel with 54 years of Federal service, including on the National War College faculty and with the Congressional Research Service. Two of his 12 books addressed politico-military strategy, and another critiqued U.S. defense planning. He now steers the Warlord Loop, a national security email forum.

the Congressional Research Service (CRS) as its Senior Specialist in National Defense. The CRS Selection Board, in response to my question about duty hours, said, "The job's too big for you or anybody else, so just do the best you can." That admonition encouraged me to float "help wanted" ads in the Pentagon 7 weeks before I reported for duty at CRS. Recipients were the Secretary of Defense, Chairman of the Joint Chiefs of Staff, and all four Service chiefs. I explained my forthcoming responsibilities, then made my pitch as follows:

Manifestly, it is in your interest as well as mine that I be well informed of [your] *views regarding what you believe to be critical problems, issues, and trends that bear on U.S. national defense. To ensure that your opinions are represented, it therefore would prove very useful if* [your] *staff could bring me up to date sometime during the period 15 May–2 June. Moreover, I would be most appreciative if a permanent point of contact on your staff could be designated.*

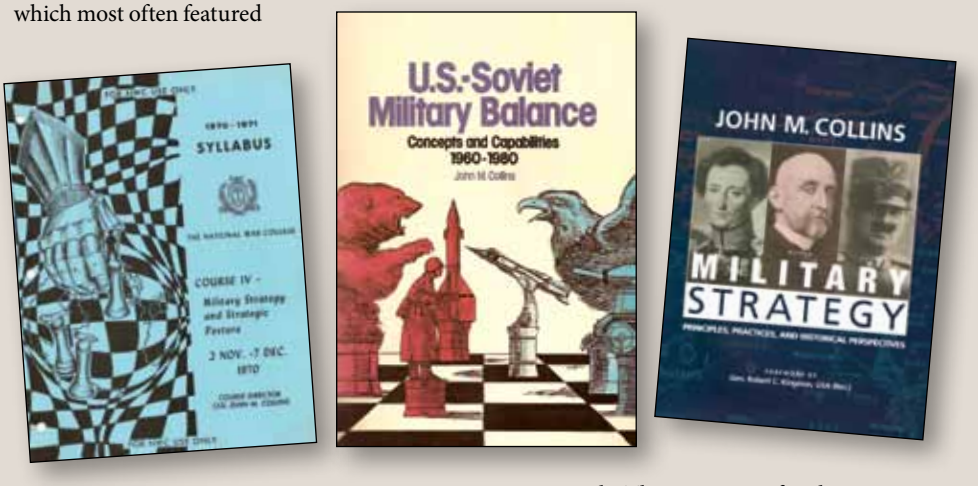
Secretary Melvin Laird, who had served nine terms in the House of Representatives, was the only dissenter, whereas all five military addressees complied. So did their successors as long as I labored at CRS. They furnished otherwise inaccessible information and reviewed my drafts for factual accuracy.

Congressman Melvin Price, soon to chair the House Armed Services Committee, became my first heavy-hitting sponsor in February 1973 when he asked CRS to "survey primary developments related to U.S. national defense during the period 1965–1972." Every Air War College student received a reprint of *Defense Trends in the United States* the following September. The school's dean told the commandant that "if students could walk away from here knowing what's in this document, they would have the substance of two-thirds of the curriculum under their belts."

Congressman Lee Hamilton, who then chaired the Near East and South Asia Subcommittee of the House Committee on Foreign Affairs, was my second sponsor. My third committee print for him, coauthored with Clyde Mark in August 1975, was an international blockbuster released hard on the heels of public speculation by President Gerald Ford, Secretary of State Henry Kissinger, and Secretary of Defense James Schlesinger that U.S. Armed Forces might seize foreign oil fields if embargoes by the Organization of Petroleum Exporting Countries threatened to "strangle" the industrialized world. Clyde and I concluded that "prospects [of U.S. success] would be poor, and plights of far-reaching political, economic, social, psychological, and perhaps military consequences the penalty for failure." Colonel Charlie Bunnell, the Marine member of the Chairman's Staff Group, told the Great Man himself (General George Brown) that Collins and Mark, "using entirely unclassified sources, came up with a better study, based on more hard facts, than you were able to get from your Joint Staff."

Collins and Mark, "using entirely unclassified sources, came up with a better study, based on more hard facts, than you were able to get from your Joint Staff"

Senator John Culver, a Pentagon critic, soon thereafter asked me to assess the U.S.-Soviet military balance. My response took off like a scalded cat in January 1976. Many foreign as well as domestic newspapers, magazines, professional journals, and the *Congressional Record* printed excerpts, which most often featured the following conclusions: "As it stands, the quantitative balance continues to shift toward the Soviet Union. U.S. qualitative superiority never compensated completely and, in certain respects, is slowly slipping away." Mixed reviews followed, but plaudits far outweighed disparagements. Senator Culver endorsed sufficiency as the correct criterion ("what each side has is less cogent than what U.S. forces can do on demand despite Soviet opposition" is the way my comparison put it). Lieutenant General Danny Graham, USA, who was then director of the Defense Intelligence Agency, regretted that Congress, rather than his outfit, produced the appraisal. Presidential candidate Ronald Reagan quoted "Culver Report" statistics during a television address on March 31, 1976.



My main claim to fame for the next 15 years was as a net assessment guru who specialized in the U.S.-Soviet military balance. I should have been pleased, but opportunities to make my mark as a strategic thinker were on extended hold. I didn't realize until much later that every congressional report I prepared was a strategic building block.

Invaluable Lessons Learned

During my tenure at the National War College, I learned four valuable lessons that appear imperishable. The following paragraphs summarize their essence so you can quickly get their gist.

Lesson 1: The Value of Fundamentals. Grand strategy is a game that anybody can play, but only gifted participants win prizes. Fixation on fundamentals is a precondition because national security interests, threats, and objectives form the framework within which policies, strategies, operational art, and tactics fit like pieces in a jigsaw puzzle. The main aim of each game is to match realistic ends with ways and means, minimizing risks in the process.

Our politico-military leaders implicitly understand strategic fundamentals, but frequent failure to consciously consider them in a disciplined fashion remains the root cause of most problems atop the U.S. national security pyramid. After one National Security Council session during the Vietnam War, so the story goes, Cabinet officers scurried for their

limousines. Something nagged at Secretary of State Kissinger. He muttered, half to himself, "Not one of us mentioned the national interest." Many seasoned observers currently question our end game in Afghanistan and wonder whether costs in terms of casualties and national treasure will be conscionable. Strategists who want to refresh their memories about ends, ways, means, and risks might find chapter 1 in my 2001 *Military Strategy* opus useful.[2]

Lesson 2: The Value of Strategic Precedents. A cartoon in my Funny File pictures a son telling his father that "there's nothing new under the sun." "That's right," replies Dad, "but there's a lot of useful facts and figures we've forgotten." My elderly War College elective course on the "Evolution of Strategic Thought" noted that modern policymakers and planners could learn a lot from the ancients about ends versus means, risks versus gains, the limits of force as a foreign policy tool, ad infinitum. Large parts of that presentation concentrated on two strategic trailblazers: Sun Tzu, a theoretician, and Alexander the Great, a creative practitioner.

Sun Tzu's timeless treatise *The Art of War*, penned about 500 BCE, balanced direct and indirect approaches beautifully, many centuries before B.H. Liddell Hart became famous. Passages underlined in my copy include, "To subdue the enemy without fighting is the acme of skill"; "Know the enemy and know yourself"; "All warfare is based on deception"; "The worst policy is to attack cities"; and "It is supremely important to attack the enemy's strategy." Violence in his view was the court of last resort, not because he was squeamish, but because he believed it is stupid to destroy enemy assets that could serve friendly purposes. Compare that conclusion with strategic bombing concepts that lay widespread waste and see which premise is preferable. U.S. planners who ignored Sun Tzu's advice in other respects invited serious problems in Vietnam, where we oriented on opposing armed forces instead of opposing strategies. We overestimated ourselves and underestimated our enemies. Technological strengths and superior numbers consequently conferred no advantage on the United States or South Vietnam.

Alexander, who played politico-military interactions like a piano, shaped enlightened policies that helped him amass an empire greater than any predecessor. He heeded his father's advice that armies are not the only weapon in the strategic arsenal, and are often the least important. He rejected Aristotle's assumption that Greeks were the Master Race, which was pretty presumptuous for a teenage prince, given his tutor's towering reputation. Alexander placated conquered people in Asia Minor, the Levant, Egypt, and Mesopotamia, and then persuaded Persian leaders to switch sides after their defeat. To cap that coup, he wed one of Darius's daughters and, in a mass ceremony, coupled many of his officers and men with Persian maidens, a splendid example of political intercourse. Satraps thereafter lessened Alexander's needs to detach forces for rear area and supply line security while he wended his way to India.

U.S. planners who ignored Sun Tzu's advice invited serious problems in Vietnam, where we oriented on opposing armed forces instead of opposing strategies

Try my take on "How Military Strategists Should Study History" to embellish your historical knowledge base most rapidly. It is in the August 1983 issue of *Military Review*.[3]

Lesson 3: The Value of Strategic Flexibility. Rear Admiral J.C. Wylie's little classic, *Military Strategy: A General Theory of Power Control*, captured my attention shortly after publication in 1967. I cannot count the number of times I've quoted his wise words, "Planning for certitude is the greatest of all military mistakes." It also is one of the worst mistakes national security strategists can make. I made that point when Air Force General Russell Dougherty, in his capacity as commander in chief, Strategic Air Command, invited me to address every flag officer under his command during a 3-day symposium at Offutt Air Force Base in September 1976. Attendees included Air Force Chief of Staff David Jones, 9 lieutenant generals, 1 vice admiral, 11 major generals, 21 brigadier generals, and a slew of academic celebrities.

My topic, "The Influence of Extremes on U.S. Strategy," documented indictments across the conflict spectrum to show how consistently U.S. strategists specialized in extremes. My presentation concluded with these words: "I'd like to announce that U.S. leaders have learned hard lessons, but they haven't. Old habit patterns persist." They still do today, when counterinsurgency and counterterrorism outrank every other facet of the Nation's strategies. Like Pogo said, "We have met the enemy, and the enemy is us." Anyone who wants to pursue strategic inflexibility further can do so by scanning my critique entitled "Déjà Vu All Over Again" in the July 2005 issue of U.S. Naval Institute *Proceedings*.[4]

Lesson 4: The Value of Intellectual Outreach. The Secretaries of State and Defense, Chairmen of the Joint Chiefs of Staff, chiefs of all U.S. military Services, combatant commands, and their main subsidiaries all lack institutional ways to generate and sustain chain reactions of creative thought that they could use to solve strategic, operational, tactical, logistical, budgetary, and countless other pressing problems. Autocratic restrictions, built-in biases, compartmentalization, enforced compromise, and security classifications aggravate routine reliance on resident thinkers and selected think tanks.

I presented intellectual clearinghouse proposals to Dr. Arthur G.B. Metcalf in June 1978, when he edited *Strategic Review* and chaired the U.S. Strategic Institute with advice and assistance from seven retired flag officers: Air Force General Bruce Holloway and Admiral John McCain, Jr.; Air Force Lieutenant General Ira Eaker; Vice Admirals Harold Baker and Ruthven Libby; Marine Lieutenant General Victor "Brute" Krulak; and Army Major General Thomas Lane. They declined.

Lieutenant General James Lee, who was director of the Army Staff in July 1981, viewed clearinghouse concepts favorably and recommended that the Army War College activate such a center as part of its strategic studies. The commandant not only agreed, but also let me draft my own job description. Those arrangements were derailed when a death in the family forced me to reluctantly decline.

A decade later (July 1992), I told Chairman Colin Powell that each issue of National Defense University's (NDU's) forthcoming publication entitled *Joint Force Quarterly* "should feature a clearinghouse for innovative ideas that the Secretary of Defense, [Chairman], and their staffs could use as intellectual tools to help solve critical problems." His response was, "I have sent your recommendations to Vice Admiral Jack Baldwin, the President of NDU, for his consideration during [the journal's] initial development. I am sure he will find your thoughts very stimulating."

Neither the lame duck Baldwin, who soon retired, nor his replacement ever contacted me concerning that topic.

Correspondence from me to General Wayne Downing in August 1993 related:

A picture on the wall of my office shows David standing over Goliath. The caption reads, "Who Thinks Wins." U.S. Special Operations Command [USSOCOM] *needs all the help it can get to thrive during these trying times. We discussed the establishment of a clearinghouse for new ideas when you were a brand new brigadier general. Now that you are* [commander of USSOCOM]*, I offer to show your staff how to put concepts into practice. You have a lot to gain and nothing to lose.*

General Downing agreed, but his clearinghouse never amounted to much, mainly because the absence of a global communication (email) network severely restricted outreach. The entire project dropped dead the day he retired.

autocratic restrictions, built-in biases, compartmentalization, enforced compromise, and security classifications aggravate routine reliance on resident thinkers and selected think tanks

I finally hit the jackpot shortly after September 11, 2001, when I conceived, recruited, and began to steer the Warlord Loop, a national security "debating society." That real-time email forum taps the broadest possible spectrum of opinion. The resultant intellectual clearinghouse features freewheeling exchanges that ventilate crucial issues from every quadrant of the compass 7 days a week. The roster currently counts about 450 national security specialists who include potentates and senior staff officers in the Defense Department, State Department, Senate and House Armed Services Committees, other civilians, and Active as well as retired Army, Navy, Air Force, Marine Corps, and Coast Guard representatives who range in rank from sergeants to four stars. Males, females, liberals, conservatives, Republicans, Democrats, and nonpartisans touch every point on the public opinion spectrum from far left to far right. One backchannel message not long ago likened benefits to a graduate education in national security at no cost except time expended.

Career-shaping Advice for Aspiring Strategists

I advise *JFQ* readers to differentiate between strategic specialists and generalists, and then decide which camp you want to occupy. Most strategists today are specialists, who figuratively dig professional post holes. Generalists are a mile wide and a quarter-inch deep, but possess abilities to point all specialists in the same direction at the same time through quality synthesis. That's the small, select group I decided to join. A CRS colleague once asked with regard to my U.S.-Soviet military balance reports, "Don't you get bored out of your gourd writing about the same subject all the time?" My answer was, "No, because the scope is stupendous." Many skilled specialists addressed various aspects in much greater detail, but nobody else produced unclassified assessments that put all relevant topics into a composite package covering comparative security interests, objectives, strategies, and tactics; military roles, functions, and missions; organizational structures from top to bottom; budgets, manpower, technologies, and industries; alliance systems; nuclear, biological, chemical, unorthodox, and traditional force capabilities on land, at sea, in the air, and in space; logistical pluses and minuses; regional deployments; related issues, options, limitations, and apparent trends. What's my bottom line? Be a strategic generalist if you want to be uniquely useful.

End of sermon. I hope that all of your strategic accidents turn out as well as mine did, or better. No walk of life can be more rewarding intellectually than that of a strategist, whether you plan for it or not. **JFQ**

NOTES

[1] "Strategic and Tactical Paper Pushing," *Army* (February 2009), 46–49, describes intelligence, contingency planning, and operational planning experiences that prepared me to make that switch.

[2] John M. Collins, *Military Strategy: Principles, Practices, and Historical Perspectives* (Dulles, VA: Brassey's, 2001).

[3] John M. Collins, "How Military Strategists Should Study History," *Military Review* 63, no. 8 (August 1983), 31–44.

[4] John M. Collins, "Deja Vu All Over Again?" U.S. Naval Institute *Proceedings* (July 2005).

LETTERS

To the Editor—Admiral Mike Mullen hits the nail on the head with his recent article on strategic communication (*JFQ* 55, 4th Quarter 2009): actions *do* speak much louder than words. No amount of good news stories can outweigh the billions of dollars we spend to support governments that are corrupt in the eyes of their people and do not share our own ideals.

It would be better to amplify the horrendous actions of our enemies against the people they claim to support. The Anbar Awakening is a perfect example of this at the operational level. A second critical vulnerability of our enemies is their own ideals—we must expose them as flawed both directly and indirectly. Mao Tse-tung was the master of this and did so effectively during the Chinese Revolution. Do not attack the individual—attack the idea and expose its flaws.

I disagree with the thought that we cannot launch ideas downrange like a rocket. Just look at the news: our enemies do so very effectively. We have been ineffective because we launch the wrong messages. We should launch attacks against our enemies' ideas, not sell our own. The goal is to make people hate our enemies more than they dislike us. Furthermore, we should worry less about reassuring our everlasting support; it will create dependency. Unfortunately, despite our best intentions, our history shows a poor record of living up to our promises and lofty ideals.

—Colonel Michael Brassaw, USMC

To the Editor—As author of the Navy's first doctrinal publication on religious ministry (Naval Warfare Publication 1–05, *Religious Ministry in the U.S. Navy*), I read with interest John W. Brinsfield and Eric Wester's article, "Ethical Challenges for Commands and Their Chaplains" (*JFQ* 54, 3d Quarter 2009). Seven years ago, the late naval chaplain, Captain Bradford E. Ableson, argued that joint doctrine needed to include professional training requirements so that chaplains

could effectively engage religious-diplomatic functions ("A Time for Conversion: Chaplains and Unified Commanders," *JFQ* 32, Autumn 2002). Unfortunately, the current article demonstrates a lack of progress in the training of chaplains to serve beyond the traditional role of providing religious ministry.

Historically, the religious-diplomatic function for the chaplain emerged, in part, due to Douglas Johnston's *Religion, The Missing Dimension of Statecraft* (Oxford University Press, 1995). The result was that in the early 2000s, the emerging debate in the Navy, Marine Corps, Army, and joint doctrine was that chaplains were not only providers and facilitators of religious ministry but also a vital component to operational success when engaged in liaison work with indigenous religious groups and their leaders. Those of us embroiled in this emerging issue tackled a number of accompanying moral issues—as well as dilemmas—without much resolution. Throughout the debate, I acknowledged the significance of religion within geopolitics, but I was uncomfortable with the movement away from the primary role of a chaplain as directed by the denomination and Department of Defense policy. This, however, did not exclude an international humanitarian function, which included working with indigenous religious leaders.

Nevertheless, then and now, institutional acceptance of the religious-diplomatic function is ad hoc at best due to the absence of a selection process and academic program to train a cadre of chaplains with the ability to operate in all unified commands. The ethical challenge begins with the institution itself. It must cease the ad hoc process of training and equipping chaplains for such a duty and responsibility. To depend on a chaplain's experience alone is a recipe for disaster. Chaplains going into such a role must possess a high level of cultural competency and understanding of the specific geopolitical issues in a given region. Without this, it is on the job learning, which often leads to unintentional blunders. Furthermore, the institution must change its career development mindset and retain a specialized group of chaplains within unified commands to address indigenous religious issues. This specialized group, beginning at the O–4 level, would be immersed in postgraduate studies that focus on humanitarian issues by using religion as a building block and not a source of divisiveness. With such expertise—a merging of academics and experience—these chaplains would be invaluable to commanders and other deploying chaplains.

Overall, the current systemic approach is haphazard and fails to retain the knowledge and experience vital for a commander's use. Notwithstanding the lack of institutional commitment, I am confident that chaplains will continue to find a way to reach out and make a deplorable situation better—not just for their own but for others as well.

—Commander Steven L. Smith, USN (Ret.)
Wayland Baptist University, Tucson–Sierra Vista

To the Editor—Dr. Smith [above] is "spot on" with his critique, background information, and challenges to the military chaplaincies regarding religious-diplomatic functions. He cites three critical gaps which are ever-so-gradually being addressed.

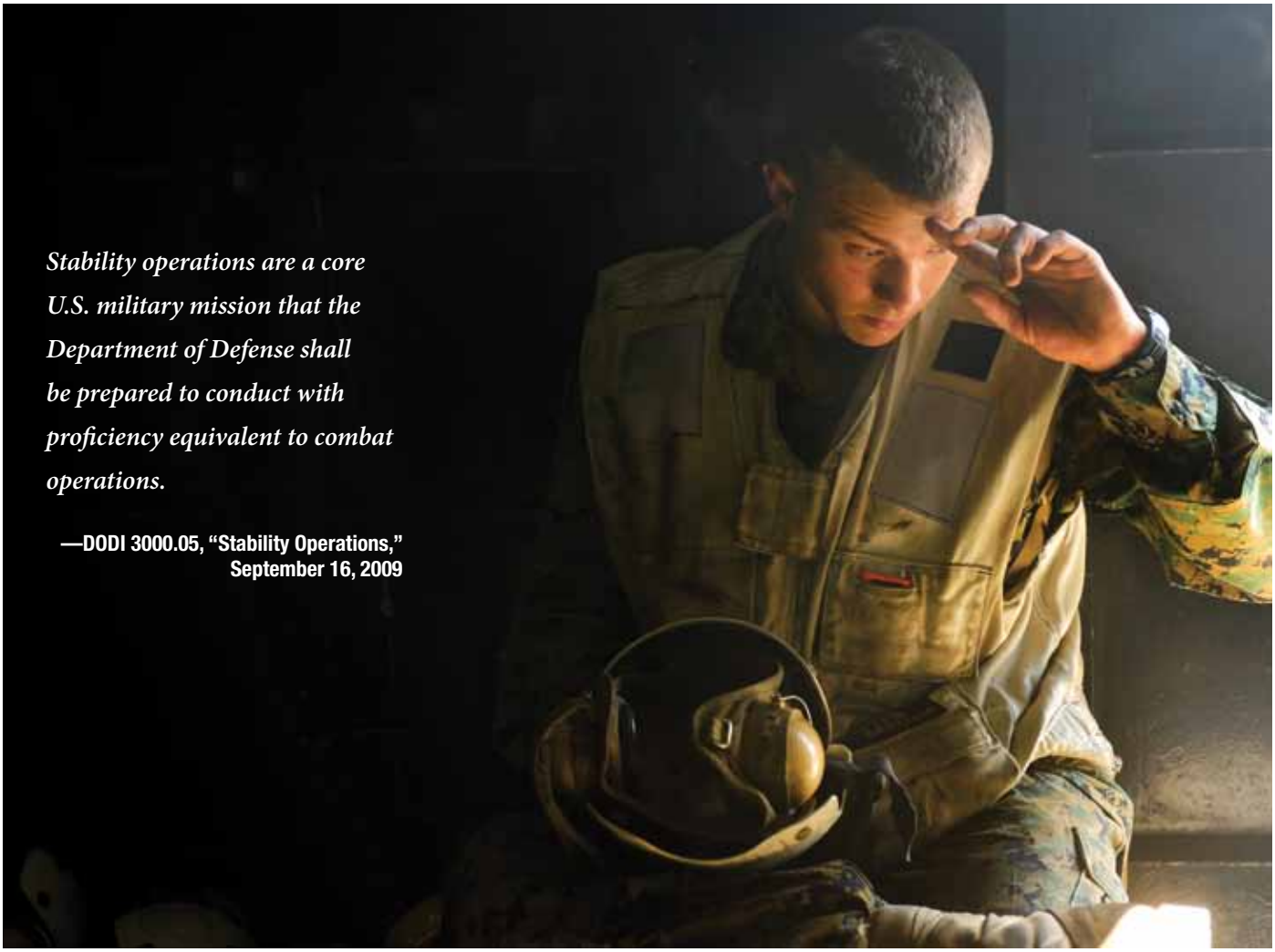
The first gap he spotlights is the lack of military doctrine for religious-diplomatic functions. In an update of the Joint Publication (JP) 1–05, *Religious Affairs in Joint Operations* (signed November 13, 2009), new and specific guidance addresses both the primary role of chaplains providing direct religious support as well as Religious Support Teams (RSTs) participating in engagement in the area of operation. Now, official military doctrine formally specifies the religious-diplomatic function for chaplains and their assistants (JP 1–05, p. III–1).

The second gap is training, education, and development for the religious-diplomatic function. Tactical and operational commanders expect chaplains to provide insight, advice, and, with command direction, take action in religious leader liaison in their area of operations. This field-driven need at the operational level is now supported with formal doctrinal guidance. To succeed, RSTs must deepen their knowledge. Two Army-driven initiatives are the U.S. Army Human Terrain System, which deploys teams for operational support, and the U.S. Army Training and Doctrine Culture Center, located at the U.S. Army Intelligence Center, Fort Huachuca, Arizona, for training support. But from my perspective, these initiatives appear to address "culture" and subsume "religion." Perhaps these Army-wide initiatives could build crucial synergy by linking with an effort launched by the Army chaplaincy—a new World Religions Center at the U.S. Army Chaplain Center and School, Fort Jackson, South Carolina. Shared effort could provide both the crucial structures and content for training, education, and development.

The third gap highlighted by Dr. Smith is building and sustaining chaplaincy expertise required to engage in religious-diplomatic efforts. At National Defense University, I teach an elective course on Religion and Security that includes newly assigned fellows from the Army War College studying at George Mason University. One of the 2009 graduates is a chaplain who went on to III Corps at Fort Hood and is preparing to deploy. He prepares a weekly Religious Impact Analysis in support of Provincial Reconstruction Teams. His expertise, and the expertise of others with advanced education in world religions, will need to be developed and deepened to make the most of the stake in training and education already invested.

Chaplains are in a position to provide religious-diplomatic advice. The key question is whether we will develop the expertise and depth of understanding to contribute to analysis and actions that enable religion to aid in conflict prevention and conflict resolution.

—Chaplain (Colonel) F. Eric Wester, USA
Senior Military Fellow
Institute for National Security Ethics and Leadership
National Defense University



U.S. Navy (Kristopher Wilson)

Above: Marine waits between flight operations aboard USS *Bataan* in support of Operation *Unified Response*, Haiti

Executive Summary

Department of Defense (DOD) components have been explicitly directed to address and integrate stability operations–related concepts and capabilities across a panorama of doctrine, organization, training, materiel, leadership and education, personnel, and facilities, and applicable exercises, strategies, and plans. In this issue, *Joint Force Quarterly* examines current interagency cooperation and strategies under way in the broad and extremely complex category of stability operations.

As delineated in the instruction quoted above, stability operations establish civil security and civil control, restore or provide essential services, repair critical infrastructure, and provide humanitarian assistance. The Armed Forces of the United States presently support foreign governments, their security forces, and international governmental organizations in disarming, demobilizing, and reintegrating former belligerents into civil society, rehabilitating former belligerents and units into legitimate security forces, strengthening governance and the rule of law, and fostering economic stability and development. As one of our Forum authors notes, the conduct of stability operations is the next frontier in jointness, as it is especially dependent on effective partnering at all levels of seniority in mitigating contemporary national security risks. Adroitly integrated civilian and military efforts are essential to mission success.

The Forum kicks off with an essay by noted nationbuilding and Middle East

security expert Dr. Seth Jones, whose recent book, *In the Graveyard of Empires*, is a study confined specifically to aspects of insurgency in Afghanistan. In this related essay, he asserts that U.S. stability and security strategy has been informed more by past experiences rebuilding nations with strong central governmental institutions than the opposite and unique condition in Afghanistan. He makes the case that a successful U.S. counterinsurgency strategy depends on improved cooperation with tribal and other community forces in Afghanistan, while maintaining a direct link to the Afghan government. He begins his argument by emphasizing the importance of protecting the population, a task that necessitates the development of the Afghan National Army and National Police, as well as counters to pervasive corruption with attendant improved governance. The great challenge to overcome is institutionalizing the central government's exclusive reliance on local security forces to establish order in rural areas. The author evaluates the history of local bottom-up (versus Federal top-down) security, a somewhat bifurcated system that improves legitimacy among tribal elements. This effort is what Dr. Jones refers to as a *community defense strategy*, tailored to ultimately orchestrate citizen support against insurgents. Jones points out that the last three decades of warfare in Afghanistan were littered with failed efforts to establish forces under the control of warlords whose fighters were not loyal to the local communities. He opines that when local forces are small, defensive, and geared toward protecting villages, they are less likely to be hijacked by regional warlords. Dr. Jones concludes by outlining a community defense initiative that needs careful monitoring and shaping by the Afghan government and international community.

Our second installment is from the U.S. Southern Command representative at the U.S. Agency for International Development, Lieutenant Commander C. Spencer Abbot. Commander Abbot observes that Federal agencies have made great strides in strategy, tactics, techniques, and procedures associated with contemporary stability operations, but DOD lags in an area that is glaringly deficient: the development of DOD personnel in interagency partnership and complementary nontraditional stability tradecraft. Just as the Goldwater-Nichols Act was crafted to remedy Service lethargy in preparing military leaders conversant in joint operations, Service action is required now to develop the complex operations skills critical to success in today's security environment. The author recommends various changes to officer education programs, personnel assignment policies, and security cooperation programs in order to advance DOD success in stability operations, which rely heavily upon familiarity with and integration of the core competencies of external partners. Commander Abbot proposes an expansion of the definition of *joint*, specifically a revised interpretation of the 2007 Title 10 legislation redefining joint matters to include all liaison and exchange assignments that occur outside an officer's core competency. Perhaps the most intriguing proposal in this article is an expansion of the U.S. Navy's Career Intermission Pilot Program, which currently allows a small number of personnel to depart Active duty for up to 3 years and return with an adjustment to their date of rank, later reintegrating in a more junior year group after obtaining external education or training unavailable in current joint professional military education. Commander Abbot concludes that continued failure "to prepare to collaborate effectively with other states and confront mutual threats may prove not a paradox, but instead a self-fulfilling prophecy."

U.S. Marine Corps (Alan Addison)

Marines provide security for food supply truck during relief mission in Léogane, Haiti

The final Forum article is a case study addressing security assistance in the South Caucasus and the complexities involved therein. Dr. Michael Mihalka of the U.S. Army School of Advanced Military Studies and Lieutenant Colonel Mark Wilcox, USA (Ret.), of the U.S. Army Command and General Staff College identify three compelling explanations for the failure of democracy in the region before exposing the irony that progress in economic liberalization has actually led to decreased political stability. Reviewing the recent histories of Georgia, Armenia, and Azerbaijan, their analysis suggests, counterintuitively, that moving a state along the path from authoritarianism to liberal democracy *increases* the likelihood of external violence unless security concerns are mitigated. The authors hypothesize the extent to which security assistance has contributed to instability in the region and explore the unintended consequences of U.S. aid to Georgia and Armenia. They emphasize that the United States and the North Atlantic Treaty Organization should not calculate the value of security assistance to the treaty organization in isolation, but must instead carefully consider the consequences of such aid for the stability of the wider region. They further predict that civil-military relations in the Caucusus are likely to remain poor, making future security assistance highly problematic. Dr. Mihalka and Colonel Wilcox conclude that the risks involved in future security assistance demand nothing less than a formal risk assessment analogous to an environmental impact statement. **JFQ**

—D.H. Gurney

Community Defense in **AFGHANISTAN**

By **SETH G. JONES**

Dr. Seth G. Jones served most recently as a Plans Officer and Advisor to the Commanding General, U.S. Special Operations Forces, in Afghanistan. He is an Adjunct Professor at Georgetown University and the U.S. Naval Postgraduate School. His most recent book is *In the Graveyard of Empires: America's War in Afghanistan* (Norton, 2009).

Since the December 2001 Bonn Agreement, which established an interim Afghan government, the United States and international community have focused on building Afghan National Army (ANA) and Afghan National Police (ANP) forces as the linchpin to security. While necessary, national security forces have *never* been sufficient to establish security in Afghanistan. This strategy reflects a Western understanding of the "state," more appropriate for U.S. efforts in Germany and Japan after World War II. Both of these nations had histories of strong central governmental institutions and competent technocrats. But Afghanistan is a much different state and combines a central government in Kabul, fiercely independent tribes in Nuristan and Pashtun areas, and a range of ethnic minorities in the west, north, and center. As illustrated during Afghanistan's most recent stable period, from 1929 to 1978, security has historically required a synergy of top-down efforts from the central government and bottom-up efforts from local tribes and other communities. Based on this reality, America's counterinsurgency (COIN) strategy needs to better incorporate working with tribal and other community forces in Afghanistan, with a direct link to the Afghan government.

This article outlines the development of *local defense forces* in Afghanistan, which should be leveraged along with other efforts to build the ANA and ANP, counter the

Afghan National Army soldiers during graduation ceremony from Kabul Military Training Center

U.S. Air Force (Larry E. Reid, Jr.)

pervasive corruption, and improve governance.[1] It begins by outlining the importance of protecting the local population, especially the challenge of relying only on Afghan National Security Forces to establish order in rural areas. It then examines the historical precedent for working with tribal and other local defense forces. It concludes by outlining a community defense initiative that needs to be carefully monitored and shaped by the Afghan government and international community.

U.S. Marine Corps (William Greeson)

Marine on Civil Affairs group patrol and tribal leader discuss infrastructure improvements in Helmand Province

Protecting the Population

Successful counterinsurgency requires protecting the local population and gaining its support—or at least acquiescence. Both insurgents and counterinsurgents need the support of the population to win. "The only territory you want to hold," one study concluded, "is the six inches between the ears of the *campesino* [peasant]."[2] British General Sir Frank Kitson argued that the population is a critical element in COIN operations, as "this represents the water in which the fish swims."[3] Kitson borrowed the reference to the water and fish from one of the 20th century's most successful insurgents, Chinese leader Mao Tse-tung, who wrote that there is an inextricable link in insurgencies "between the people and the troops. The former may be likened to water and the latter to the fish who inhabit it."[4]

One of the most significant challenges in Afghanistan has been protecting the local population, especially in rural areas. Some studies argue that a rough estimate needed to win a counterinsurgency is 20 security forces per 1,000 inhabitants.[5] As the U.S. Army and Marine Corps Counterinsurgency Manual notes, "Twenty counterinsurgents per 1,000 residents is often considered the minimum troop density required for effective COIN operations; however, as with any fixed ratio, such calculations remain very dependent upon the situation."[6] This ratio translates into a force requirement of approximately 660,000 troops for Afghanistan, which has approximately 33 million people. Yet these numbers do not provide a clear roadmap, and they certainly do not take into consideration such variables as the competence of local forces and what types of forces should be used. For example, what percentage of the forces should be international versus Afghan? Among Afghan forces, what percentage should be national versus local?

There is no clear-cut answer—and certainly no magic number—of U.S. and Afghan forces to conduct a successful counterinsurgency campaign and establish security. Most public discussions in the United States have focused on increasing the number of international, ANA, and ANP forces. But there will likely be a gap of at least 150,000 troops to secure the Afghan population, even with the projected increases in Afghan National Security Forces.[7] More importantly, even during Afghanistan's most recent stable period—the 1929–1978 Musahiban dynasty led by Nadir Shah, Daoud Khan, and Zahir Shah—central government forces generally did not establish security at the village level. Instead, local forces assumed that task in rural areas. In Pashtun areas, the role of tribes has been particularly important.

the tribal structure has evolved over the past several decades because of such factors as war, drought, migration patterns, and sedentarization

Tribes, subtribes, clans, *qawm*s, and other local institutions have historically played an important role in Afghanistan. A *qawm* is a unit of identification and solidarity, and could be based on kinship, residence, or occupation.[8] Pashtunwali, the Pashtun code of behavior, shapes daily life through such concepts as *badal* (revenge), *melmastia* (hospitality), *ghayrat* (honor), and *nanawati* (sanctuary). The tribal structure has evolved over the past several decades because of such factors as war, drought, migration patterns, and sedentarization, the process by which tribes cease seasonal or nomadic lifestyles and settle in permanent habitats. The 1978 tribal rebellion against the communist regime and subsequent Soviet invasion initiated a cycle of warfare causing massive displacement among tribes.[9] The departure of the Soviets in 1989 ushered in another civil war among competing factions that triggered mass migration.[10]

Nonetheless, the tribal structure remains strong in many Pashtun areas of western, southern, and eastern Afghanistan, and jirgas and shuras remain instrumental in decisionmaking at the local level. A jirga has historically been a council established on a temporary basis to address specific issues, while a shura has been a more permanent consultative council. However, the terms are often used interchangeably. Tribes tend to be more hierarchical in southern and western Afghanistan than in the east. The southern Durrani tribes, for instance, are divided between the Panjpai (including the Alizai, Ishakzai, Khugiani, Maku, and Noorzai) and

the Zirak (Achakzai, Alikozai, Barakzai, and Popalzai). In some areas, the Taliban appear to be currying favor with some of the Panjpai tribes—including some of the Ishakzai, Alizai, and Noorzai subtribes—against the Zirak tribes.[11] However, there appear to be opportunities to coopt a range of Durrani and other communities across Afghanistan to help them establish village-level security.

A History of Bottom-up Security

Establishing security in Afghanistan has generally been a combination of top-down efforts by the central government, whose forces have established security in major cities and along key roads, crushed revolts and rebellions, and mediated intratribal disputes, and bottom-up efforts from local tribes and other communities, whose forces have established security at the village level in rural areas.

The bulk of the current insurgency is occurring in Pashtun areas. There are at least five traditional Pashtun institutions for organizing local security forces. In each case, they implement decisions of tribal jirgas or shuras. A *tsalweshtai* is a guard force. Members of the tribe are appointed for a special purpose, such as protecting a valley from raiding groups. An *arbakai* is similar to a *tsalweshtai* and is a tribal police force. Members supervise the implementation of the tribal jirga's decisions. *Arbakai* have been most prolific among the Pashtun tribes in such eastern provinces as Paktia, Khowst, and Paktika. A *chagha* is a group of fighters raised spontaneously within a village when faced by a bandit raid, robbery, or similar threat. *Chagha* is also the word for the drum used to alert villagers of the need to organize and drive off invaders. A *chalweshtai* is a larger force than a *tsalweshtai* and is raised by the tribe from families to implement tribal decisions. A *chalweshtai* may be engaged in community projects, such as digging a canal or building a dam, but they are more commonly used to perform security tasks. A *lashkar* is a body of tribesmen organized to deal with a large-scale problem, and is often used for offensive purposes.[12]

Tribal and other local forces have been used throughout the history of Afghanistan and Pakistan. Beginning in 1880, Abdul Rahman Khan made one of the first attempts at modern state-building in Afghanistan and tried to establish an independent army. But he still relied on tribal levies in Pashtun areas. During his two-decade rule, the tribal levies were helpful in establishing order, though he still faced armed opposition from Hazaras, Aimaqs, Nuristanis, and various Pashtun tribal confederations throughout the country.[13]

In 1929, Nadir Shah assembled a tribal army to capture Kabul from Habibullah Kalakani, and he used tribal forces against an uprising by the Shinwari subtribes and Tajiks in Kabul. These forces were effective in overthrowing the Kalakani government and establishing order, though they did face some resistance from Uzbeks, Tajiks, and Hazaras.[14] When Nadir Shah took power, he exempted some tribes in eastern Afghanistan from conscription in the military and police. *Arbakai* were used as a police force by tribal jirgas to implement their decisions or to respond to specific threats against the community or tribe. During the reign of King Zahir Shah, the government often did not provide direct salaries to the *arbakai* in Loya Paktia, but instead gave privileged status, property, money, advisory roles, and exclusion from military service to tribal authorities.[15]

Pakistan also has a history of using tribal institutions. In 1947, the newly formed state used *lashkar*s in an attempt to seize Kashmir before the Maharaja of Jammu and Kashmir could join India. Most were from the Mahsud, Afridi, and Mohmand tribes, though there were also some Kashmiri auxiliaries. Pakistan General Akbar Khan organized the forces and had loose command and control. Ultimately, however, the *lashkar*s were not effective in securing Kashmir because they faced a much better organized Indian army, and many of the *lashkar* fighters were not from the areas they fought in, undermining their legitimacy.[16] Pakistan also used *lashkar*s during Operation *Gibraltar* in 1965 to liberate Kashmir from Indian control. They were trained and led by Pakistan's Special Services Group, as well as Azad Kashmir and Jammu officers. Much like in 1947, however, they were ineffective. The *lashkar*s were defeated by regular Indian forces, and were viewed as illegitimate by locals since few if any of the commanders spoke Kashmiri.[17] In both the 1947 and 1965 cases, tribal *lashkar*s were used with little success for prolonged offensive operations against much better equipped and organized armies.

tribal and other local forces have been used throughout the history of Afghanistan and Pakistan

The Afghan government used tribal forces more effectively in some areas. The Zahir Shah government used Shinwari, Mohmand, and Khogyani *arbakai* to establish

U.S. Air Force (Efren Lopez)

Afghan National Army soldier conducts search in Zabul Province

order in eastern Afghanistan in the 1960s and 1970s. The government handed over a section of irrigated land to the tribal jirgas, which was intended to help cover *arbakai* expenses. The amount of land ranged from 1,000 square meters per small village with one or two *arbakai* members to 8,000 square meters for bigger groups of *arbakai*.[18] Unlike the previous Pakistan *lashkar*s, these *arbakai* were used primarily for defensive purposes and were organized under the auspices of legitimate tribal institutions, contributing to their effectiveness. In Nuristan, villages established local defense forces to protect their areas. As one assessment of the Vaygal Valley of south-central Nuristan concluded, "The survival of Kalasha villages depended on careful, unrelenting attention to defensive arrangements" since there was virtually no government presence in the area.[19]

By the time the Soviets invaded in 1979, a range of anti-Soviet and progovernment militias were established throughout the country. Some were tribal forces, while others—such as Abdul Rashid Dostum's Jowzjani militia—were centered on charismatic, powerful commanders. There were some successful uses of *arbakai* during the Soviet era. In several Afghan refugee camps in the Haripur area of Pakistan's North West Frontier Province, for instance, *arbakai* were raised from among the refugees. These groups of unpaid volunteers worked effectively to help maintain law and order, discourage harassment of girls, and prevent theft.[20] The Soviets attempted to establish a range of tribal militias, mostly under the direct control of the Afghan Ministry of Interior. They were not particularly effective, partly because the Afghan government was so illegitimate, and they were used for offensive purposes.[21] In addition, each of the main mujahideen parties had fairly large militia forces.[22] Those forces were helpful in overthrowing the Soviet-backed government and driving Soviet forces out of Afghanistan, but they were deeply counterproductive over the long run as Afghanistan slipped into anarchy. Many turned on each other in a bid to control Kabul, creating a window of opportunity for the Taliban to rise in 1994. Ultimately, they were not effective in establishing order because they centered on charismatic individuals rather than legitimate tribal institutions, were excessively large and well armed, used for offensive missions, and operated in a governance vacuum since the government had stopped functioning. The accompanying table highlights some of the most significant historical uses of local forces.

A Community Defense Approach

Based on the historical use of local security forces and the current realities in Afghanistan, a community defense strategy should be organized around several principles:

- identifying grassroots initiative
- utilizing legitimate local institutions such as shuras and jirgas
- ensuring the Afghan government is the lead for monitoring and overseeing community defense programs
- providing a quick reaction force to aid endangered communities
- establishing development assistance.

The term *community defense* is used here instead of *tribal defense* or *tribal engagement* because, as noted earlier, the tribal structure has weakened or ceased to exist in some areas.

Grassroots. A community defense initiative should begin from the bottom up, not from top-down efforts by the Afghan government or coalition forces. This development is critical; a local defense force will only be effective where locals view it as in *their* interest. Two types of opportunities are particularly apropos. The first are cases where tribes, subtribes, clans, *qawm*s, or other local communities have already come to the Afghan or coalition governments asking for assistance against insurgent groups. The second are cases where tribes or other local institutions have already resisted insurgents. Fortunately, there are a range of grassroot initiatives where local tribes and communities have resisted insurgents or asked Afghan or coalition forces for assistance. They extend from Noorzais, Barakzais, and Alikozais in the west and south to Shinwaris, Kharotis, Mangals, Chamkanis, and Jajis in the east. Even in such northern provinces as Konduz

Tribal and Other Local Forces, 1880 until Today

Case	Dates	Objective	Effectiveness
Abdul Rahman Khan's Pashtun tribal levies	1880–1901	Establish order with aid of army	Established order, though Abdul Rahman Khan had to deal with some rebellions
Arbakai and other tribal forces during Musahiban dynasty	1929–1978	Establish village-level security with aid of government	Established security
Pakistan *lashkar*s in Kashmir	1947–1948 and 1965	Seize Kashmir	Did not secure Kashmir; *lashkar*s not local and minimally effective for offensive purposes
Anti-Soviet tribal forces	1979–1989	Defeat Soviet and Afghan armies	Ultimately defeated the Soviet and Afghan armies
Pro-Soviet tribal forces	1984–1989	Help establish order in rural areas	Not effective, partly because Afghan government was so illegitimate and used for offensive purposes
Militias during the civil war (Dostum, Massoud, and Hekmatyar)	Late 1980s/early 1990s	Control Kabul	Did not establish order because militias were large, offensive, and ultimately unpopular among Afghans
Popalzai, Barakzai, and other tribal forces	November 2001–March 2002	Control Uruzgan, Kandahar, Zabol, and Helmand Provinces	Helped overthrow Taliban and established initial security and order

and Baghlan Districts, there are ongoing local efforts by Tajiks, Uzbeks, and even Pashtuns to fight the Taliban and other insurgents. There appear to be several reasons for these developments. In some areas of eastern Afghanistan, such as Konar and Nangarhar Provinces, some communities have lost faith with local police forces, which are perceived as corrupt and incompetent. In such northern provinces as Konduz and Baghlan, locals have created forces because they fear a spreading Taliban insurgency and are seeking additional protection.

Legitimate Local Institutions. Local forces such as *arbakai* have generally been most effective when they are developed through legitimate local institutions. Indeed, jirgas and shuras represent the Pashtun version of a democratic institution, since participants are leaders who represent their tribal and other constituents.[23] In practical terms, the jirga or shura should decide whether they want a local defense force, choose who should participate, oversee what tasks it performs, coordinate with Afghan government officials, and decide when to disband it. A 2008 survey by the Asia Foundation indicated that most Afghans did not trust warlords, and only 4 percent would turn to a local warlord to deal with a security problem.[24] As noted earlier, forces under the control of warlords have generally been unpopular because they are used to benefit individuals rather than tribes or other institutions. In addition, local forces have often been most effective when they are viewed as supporting nearby interests, especially defending villages for the sake of the village rather than the central government or foreigners.

Afghan Lead. Any community defense program must be Afghan-led. Xenophobic Afghans oppose a large, overt foreign military footprint.[25] Taliban propaganda consistently refers to the war as one against foreign occupation. One Taliban propaganda message warned Afghans that "the Americans themselves have unveiled their antagonistic nature toward the Afghans, and disclosed their ill-fated objectives considering the killing of the Afghans, burning them in more furnaces of war, and torturing them as a U.S. duty and main course of action."[26] A community defense program must be perceived by the local population as defending their own interests, organized and run exclusively by the local jirga and shura, and not beholden to any outsiders. Nonetheless, the Afghan government can—and must—provide the resources and capabilities to support community defense programs. This could be done in several ways. Provincial governors and district subgovernors should participate in community defense shuras and jirgas to help oversee the program and provide assistance when able. Their role may be particularly important when community defense programs occur in areas with multiple tribes to assist in mediation. In Chamkani District in Paktia Province, for example, many tribes have opposed the Taliban and other insurgents, including the Jajis, Chamkanis, Mangals, and Moqbils. But they have also engaged in land and other disputes among themselves. In addition, ANA and ANP forces must be involved in helping vet community defense members, training them in basic defensive tactics, sharing information with them, and establishing a community system that can respond in emergencies.

a local defense force will only be effective where locals view it as in their *interest*

Avoiding the appearance that a local defense force is an American program does not mean withholding U.S. participation. Instead, the American footprint should be minimal. There are several specific actions that U.S. forces can take to minimize public exposure. One is to work with ANA and ANP forces to provide basic training and guidance to a local defense force (a train-the-trainer program). A case-by-case evaluation should be made on what training is needed based on the competence of local security forces, threat level in the area, and competence of ANA and ANP forces conducting training. To facilitate these activities, coalition forces should live in or around the villages where community defense programs are established to help ensure that they are not used for offensive purposes or come under the control of warlords. This means buying or renting *qalat*s, or safe houses, in villages. U.S. Special Forces are ideally suited for implementing this type of program, which has similarities to the Robin Sage training exercise conducted at the John F. Kennedy Special Warfare Center at Fort Bragg, North Carolina.

Quick Reaction Capability. Pakistan has repeatedly tried to raise *lashkar*s against militants in the Federally Administered Tribal Areas and North West Frontier Province but has often failed to protect them from retaliation. In December 2008, Pir Samiullah organized a *lashkar* against militants in Swat, but the retaliation from local militants was swift. He and eight supporters were captured and executed publicly.[27] In Bajaur, local militants retaliated by conducting a series of suicide bombings and assassinations when the Salarzai tribe established *lashkar*s to assist Pakistan security forces. They slit the throats of four Hilal Khel tribal leaders from the Charmang area of Bajaur who had organized a *lashkar* against militants, dumping their bodies along a road.[28]

Consequently, an essential part of any local defense force should be establishing a rapid reaction capability that is on standby to come to the assistance of the community. This quick reaction force could be composed of ANA, ANP, and coalition units. It would be counterproductive to have local communities stand up to the Taliban, Haqqani network, and other groups and be overrun. Providing security to the local population should be the top priority of coalition forces, as opposed to chasing the enemy and killing enemy combatants.[29] This requires establishing a communications system that connects villages to the quick reaction force to ensure the call for help is received in a timely manner. It may require providing cell phones, Thurayas satellite phones, or radios to villages to contact ANA, ANP, and coalition forces. Communication between a local defense force and the quick reaction force should be not only for rapid response, but also for general intelligence regarding enemy movements in the area and information on their activities and capabilities.

Development. U.S. and other coalition forces should generally not pay local defense members a regular salary, since they should be motivated to work for their communities and not outsiders. A better approach may be to provide development aid that benefits the communities. A rising complaint against the Afghan government is that it has not provided basic services to the population, especially in rural areas.[30] To achieve maximum impact, community elders should be asked what projects their communities need rather than have outside development experts make that determination. Indeed, the U.S. Agency for International Development has developed a framework to identify, prioritize, and mitigate the causes of instability—and to serve as a baseline for development aid—called the

Tactical Conflict Assessment and Planning Framework. It includes a range of questions to ask villagers, such as: Have there been changes in the village population in the last year? What are the most important problems facing the village? Whom do you believe can solve your problems? What should be done first to help the village?

The goal should be to implement development projects with a COIN focus. The primary goal should not necessarily be to improve literacy or infant mortality rates, but to encourage more people to turn against insurgents. Coordination with Afghanistan's Ministry of Rural Rehabilitation and Development, U.S. Agency for International Development, and other development organizations is important to facilitate the implementation of projects and to provide incentives for communities establishing local defense forces.

An effective COIN strategy that secures the local population needs to focus on improving the competence of the ANA and ANP, counter corruption, and improve broader governance in Afghanistan. But it also needs to include leveraging a range of bottom-up initiatives where tribes and other local communities have resisted the Taliban. Former U.S. Speaker of the House of Representatives Tip O'Neill could have been talking about Afghanistan when he quipped that "all politics is local." Establishing local defense forces where there is a local initiative should be encouraged. But the efforts also need to be carefully managed by the Afghan government, with support from coalition forces. "We need to subcontract security in some areas to local villagers," Minister of Interior Mohammad Hanif Atmar remarked. "And then let Afghan and coalition forces target insurgents in between."[31] In short, villages that established local defense forces would provide self-defense in their villages—and only in their villages—and ANA, ANP, and coalition forces could conduct offensive operations outside of villages.

coalition forces should live in or around the villages where community defense programs are established

A carefully implemented and managed community defense initiative should be able to minimize the risks and maximize the benefits of leveraging local security forces. Keeping forces small, defensive, under the direct control of local jirgas and shuras, and monitored by Afghan national and coalition forces should prevent the rise of warlords in Afghanistan. Indeed, Afghan and coalition forces can learn several lessons from the successful and unsuccessful use of local security forces to establish security.

One is that local defense forces need to be tied to legitimate community institutions, especially village-level shuras and jirgas. This means empowering legitimate institutions that have historically contributed to local security and the rule of law. It also means preventing local forces from becoming hijacked by warlords. The last three decades of warfare in Afghanistan were littered with efforts to establish forces under the control of warlords, whose fighters were loyal to them and not the communities. Another lesson is that local forces need to be small, defensive, and geared toward protecting villages. Between 1929 and 1978, Afghan leaders such as Nadir Shah, Zahir Shah, and Daoud Khan supported local security forces in much of rural Afghanistan. A final lesson is that the Afghan government needs to manage the process. The objective

U.S. Marine Corps (William Greeson)

ANA soldier and U.S. Marine interview residents in Helmand Province to determine their needs

should be to help tribes, subtribes, and communities provide security and justice in their areas and help the government manage the process. When tribes rebel against the government or fight each other, Afghan government and coalition forces can crush the uprising or mediate the disputes.

A range of tribes and local communities have already expressed a desire to stand up to the Taliban and other insurgents. The Afghan government and coalition forces need to take advantage of these opportunities. As one senior Afghan government official recently said to me, "It's the only way out of this situation."[32] **JFQ**

NOTES

[1] The World Bank ranked Afghanistan among the top 1 percent of countries as most corrupt, and Transparency International ranked it 176th of 180. See World Bank, *Governance Matters 2009: World Governance Indicators, 1996–2008* (Washington, DC: World Bank, 2009); Transparency International, *Corruption Perceptions Index* (Berlin: Transparency International, 2008).

[2] Daniel Siegel and Joy Hackel, "El Salvador: Counterinsurgency Revisited," in *Low Intensity Warfare: Counterinsurgency, Proinsurgency, and Antiterrorism in the Eighties*, ed. Michael T. Klare and Peter Kornbluh (New York: Pantheon Books, 1988), 119.

[3] Frank Kitson, *Low Intensity Operations: Subversion, Insurgency, Peacekeeping* (Hamden, CT: Archon Books, 1971), 49. On counterinsurgency strategies, also see C.E. Callwell, *Small Wars: Their Principles and Practice*, 3d edition (Lincoln: University of Nebraska Press, 1996), 34–42; David Galula, *Counterinsurgency Warfare: Theory and Practice* (St. Petersburg, FL: Hailer Publishing, 1964), 17–42.

[4] Mao Tse-tung, *On Guerrilla Warfare*, trans. Samuel B. Griffith II (Urbana: University of Illinois Press, 1961), 93.

[5] James T. Quinlivan, "Force Requirements in Security Operations," *Parameters* 25, no. 4 (Winter 1995–1996), 59–69; James Dobbins, *America's Role in Nation-building: From Germany to Iraq* (Santa Monica, CA: RAND, 2003), and *The UN's Role in Nation-building: From the Congo to Iraq* (Santa Monica, CA: RAND, 2005).

[6] Field Manual 3–24 and U.S. Marine Corps Warfighting Publication 3–33.5, *Counterinsurgency* (Washington, DC: Headquarters Department of the Army and Headquarters Marine Corps Combat Development Command, December 2006), 1–13.

[7] There are approximately 70,000 international forces in Afghanistan (with the possibility of increasing by another 30,000 or 40,000). The growth rates for Afghanistan National Security Forces (ANSF) include 134,000 for the army by 2010 (and potentially increasing to 240,000) and 160,000 for the police by 2013. This translates to 364,000 total international and ANSF, with the possibility of expanding to 510,000. See, for example, "Memo from Stanley A. McChrystal to the Honorable Robert M. Gates, Subject: COMISAF's Initial Assessment, Reference: Secretary of Defense Memorandum 26 June 2009, 30 August 2009."

[8] David Phillips, *Afghanistan: A History of Utilization of Tribal Auxiliaries* (Williamsburg, VA: Tribal Analysis Center, 2008), 1.

[9] See, for example, M. Nazif Shahrani, "Introduction: Marxist 'Revolution' and Islamic Resistance in Afghanistan," in *Revolutions and Rebellions in Afghanistan: Anthropological Perspectives*, ed. M. Nazif Shahrani and Robert L. Canfield (Berkeley: Institute of International Studies, University of California, Berkeley, 1984), 3–57.

[10] Barnett R. Rubin, *The Fragmentation of Afghanistan: State Formation and Collapse in the International System* (New Haven: Yale University Press, 2002); and Roohullah Ramin, *Afghanistan: Exploring the Dynamics of Sociopolitical Strife and Persistence of the Insurgency*, Occasional Paper 2 (Ottawa: Pearson Peacekeeping Centre, 2008), 1–38.

[11] See, for example, Thomas Johnson and M. Chris Mason, "Understanding the Taliban and Insurgency in Afghanistan," *Orbis* 51, no. 1 (2006); *The Panjpai Relationship with the Other Durranis* (Williamsburg, VA: Tribal Analysis Center, January 2009); *The Quetta Shura: A Tribal Analysis* (Williamsburg, VA: Tribal Analysis Center, October 2009).

[12] Mohammed Osman Tariq, *Tribal Security System* (Arbakai) *in Southeast Afghanistan* (London: Crisis States Research Centre, December 2008), 1–19; Shahmahmood Miakhel, "The Importance of Tribal Structures and Pakhtunwali in Afghanistan: Their Role in Security and Governance," in *Challenges and Dilemmas of State-Building in Afghanistan: Report of a Study Trip to Kabul*, ed. Arpita Basu Roy (Delhi: Shipra Publications, 2008), 97–110; Phillips, 1–2.

[13] Kristian Berg Harpviken, "Transcending Traditionalism: The Emergence of Non-State Military Formations in Afghanistan," *Journal of Peace Research* 34, no. 3 (August 1997), 271–287; Rubin, 48–52.

[14] Rubin, 58–59.

[15] Miakhel.

[16] Shuja Nawaz, *Crossed Swords: Pakistan, Its Army, and the Wars Within* (New York: Oxford University Press, 2008), 42–75; Julian Schofield and Reeta Tremblay, "Why Pakistan Failed: Tribal Focoism in Kashmir," *Small Wars and Insurgencies* 19, no. 1, March 2008, 23–38.

[17] Altaf Gauhar, *Ayub Khan: Pakistan's First Military Ruler* (Lahore: Sang-e-Meel Publications, 1993); Schofield and Tremblay; Nawaz, 205–214.

[18] Tariq, 9.

[19] David J. Katz, "Responses to Central Authority in Nuristan: The Case of the Vaygal Valley Kalasha," in *Revolutions and Rebellions in Afghanistan*, 97, 99.

[20] Tariq, 8–9.

[21] Richard F. Nyrop and Donald M. Seekins, eds., "National Security," *Afghanistan Country Study* (Washington, DC: Foreign Area Studies, The American University, 1986); Lester W. Grau and Michael A. Gress, *The Soviet-Afghan War: How a Superpower Fought and Lost* (Lawrence: University Press of Kansas, 2002), 50–51; Allan Orr, "Recasting Afghan Strategy," *Small Wars and Insurgencies* 20, no. 1 (March 2009), 87–117.

[22] Zalmay Khalilzad, *Prospects for the Afghan Interim Government* (Santa Monica, CA: RAND, 1991); Olivier Roy, *Islam and Resistance in Afghanistan,* 2d edition (New York: Cambridge University Press, 1990).

[23] In practice, there are often competing jirgas and shuras at the village, district, and provincial levels. Consequently, deciphering which are "legitimate" and "illegitimate" can be difficult for outsiders. In addition, the Taliban have targeted tribal leaders in some areas who resist their activity. Many have been killed, while others have fled to cities such as Kabul and Kandahar.

[24] Asia Foundation, *Afghanistan in 2008: A Survey of the Afghan People* (Kabul: Asia Foundation, 2008).

[25] On declining perceptions of the United States, see, for example, ABC News/BBC/ARD Poll, *Afghanistan—Where Things Stand* (Kabul: ABC News/BBC/ARD, 2009).

[26] Jihadist Web site <www.AlBoraq.info>, February 4, 2009.

[27] Zahid Hussain, "Pakistan Turns to Tribal Militias," *The Wall Street Journal*, September 30, 2008, A13.

[28] Jane Perlez and Pir Zubair Shah, "Pakistan Uses Tribal Militias in Taliban War," *The New York Times*, October 24, 2008.

[29] See, for example, David Kilcullen, *The Accidental Guerrilla* (New York: Oxford University Press, 2009).

[30] See, for example, Seth G. Jones, *In the Graveyard of Empires: America's War in Afghanistan* (New York: Norton, 2009).

[31] Author interview with Minister of Interior Mohammad Hanif Atmar, September 2009.

[32] Author interview with Afghanistan cabinet minister, October 2009.

AP Images (Charles Dharapak)

Special envoy to Pakistan and Afghanistan, Vice President, Secretary of State, and special envoy to the Middle East during gathering at State Department, January 2009

Educate to Cooperate

Leveraging the New Definition of "Joint" to Build Partnering Capacity

By C. SPENCER ABBOT

On January 22, 2009, in his first major address on foreign policy following his inauguration, President Barack Obama stated that "[d]ifficult days lie ahead. As we ask more of ourselves, we will seek new partnerships and ask more of our friends and more of people around the globe, because security in the 21st century is shared." Confronting shared security challenges in coming years will test the capacity of the Department of Defense (DOD) to effectively partner with its allies, other governmental agencies, nongovernmental organizations (NGOs), and at times even the private sector. The last comprehensive legislation enacted to improve partnering capacity within DOD was the Goldwater-Nichols Department of Defense Reorganization Act of 1986.

Goldwater-Nichols was designed to facilitate more effective cooperation among the military Services within DOD and was suited to the Cold War strategic environment in which it was enacted. The education and training of DOD personnel for the multifaceted security challenges of the coming century should reflect the vastly different threat environment that has arisen since the end of the Cold War and should be tailored to the missions and tasks that DOD will be asked to perform over the coming decades. This article recommends several changes to officer education programs, personnel assignment policies, and DOD's security cooperation programs in order to advance its ability to effectively partner with external actors.

One key step needed to increase DOD partnering capacity has already occurred. Substantial legislative changes were made in 2007 to the definition of *joint matters* under the Goldwater-Nichols construct, broadening the aegis of the term and better reflecting the modern demands of cooperation by DOD with varied external partners. As a continuance of this process under the revised definition, additional expansion of the types of assignments and educational experiences considered "joint," to include liaison officer positions and exchange tours, would help prepare personnel more fully for the demands of working with external actors in the 21st-century strategic environment.

To ensure that its efforts to work with allies to build cultural and operational familiarity correspond with the demands of coming years, DOD's extensive and important security cooperation with foreign partners

should incorporate reciprocal exchanges whenever possible to reflect a mindset of mutual respect and shared responsibility. To correspond with the broadened definition of joint matters in the 2007 legislation, joint professional military education (JPME) credit should be considered for a broader range of educational experiences. "Off-ramps" and "on-ramps" for departing and reentering military Service should be more readily available to DOD personnel, contributing to a more responsive system for shaping human capital. Given that it takes more than 30 years to educate and train the military's most senior leaders, a less static strategic environment necessarily demands a more flexible, adaptive system for educating military officers and preparing them for the complexities of modern joint operations.

The New Definition of *Joint*

Since the passage of Goldwater-Nichols in 1986, *joint duty* has implied a job typically held by a field grade or senior officer, working on a staff with representatives from the other Services. In the ongoing operations in Iraq and Afghanistan, a substantial requirement for expertise in working with external actors has arisen at the tactical level. Junior officers find themselves interacting directly with a host of external actors, from foreign coalition partners to other governmental agencies and NGOs to local citizens in a variety of roles. The extraordinary complexity of these activities, both with respect to irregular warfare and stability operations, as well as more conventional kinetic operations occurring within the modern post–Cold War milieu, necessitates much broader skill sets at much earlier points in officers' careers.

The personnel system set up by Goldwater-Nichols was enacted at a time when massive kinetic operations were the primary capability necessitated by the Army's AirLand Battle doctrine and the Navy's Maritime Strategy, which focused on the Soviet blue-water threat. Goldwater-Nichols made major contributions regarding the interoperability of the Services themselves and focused on the operational and strategic levels of war. Some efforts have already been made to improve partnering capacity with external actors, and further work is needed to improve DOD's capacity in this sphere, especially at the tactical level.

Prompted by shortcomings in inter-Service coordination during both the *Desert One* debacle in Iran in 1980 and the 1983 invasion of Grenada, Goldwater-Nichols made great strides in addressing shortcomings in the ability of the Services to effectively partner in planning and executing joint operations. Especially in light of the profound difficulties encountered within the U.S. interagency process in planning for the postconflict phase four of U.S. operations in Iraq, numerous calls have been made for a "Goldwater-Nichols for the interagency community."[1] Yet any broad reorganization of the U.S. national security apparatus should reflect the importance that effective partnering, not only with other U.S. Government actors but also with other state and nonstate actors, has across nearly the full spectrum of U.S. military missions. The Goldwater-Nichols legislation made sweeping changes to the authorities of the Chairman of the Joint Chiefs of Staff and combatant commanders, diminishing the role of the Services, whose outsize influence was seen by Congress to have been a substantial impediment to the effective planning and conduct of joint operations.

A critical function of the Goldwater-Nichols legislation was its impact on military personnel management policies, and the effect of those policies on the career paths of officers and the distribution of human capital within DOD. The legislation created a staff-centric model for the determination of joint duty assignments, and the Services were thus statutorily required to assign top officers to the Joint Staff, at combatant command staffs, and other multi-Service staffs. The January 2009 DOD *Quadrennial Roles and Missions Review Report* states that "[s]ince our Nation's future security depends equally on interagency cooperation, coordination, and integration efforts, building unity of effort requires us to expand the concept of jointness beyond the Department of Defense."[2] In 2007, Congress made an important legislative change to the Title 10 definition of joint matters established under Goldwater-Nichols. Under this change, joint matters now include "matters related to the achievement of unified action by multiple military forces." Importantly, the definition

the modern post–Cold War milieu necessitates much broader skill sets at much earlier points in officers' careers

U.S. Air Force (Thomas A. Coney)

Soldiers provide security as PRT members inspect new market in Kut, Iraq

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of *multiple military forces* has been expanded to encompass forces that involve "participants from the armed forces" and one or more of the following: "other departments and agencies of the United States; the military forces or agencies of other countries; and non-governmental persons or entities."

This change was made in large part as an adaptation to on-the-ground reality in Afghanistan and Iraq. Members of Provincial Reconstruction Teams and multinational training units, who engage and coordinate with many disparate organizations at the tactical level, had not previously received joint credit because their billets had not been designated joint under the prior system. Reserve officers, who have borne a substantial portion of operations in Afghanistan and Iraq, were also made eligible for joint credit under the 2007 legislation. The legislation has been implemented by DOD under a new framework called the Joint Qualification System. Under the previous system, only specific billets listed on a document called the Joint Duty Assignment List (JDAL) were authorized joint credit. The Office of the Secretary of Defense and Joint Staff's Manpower Directorate have worked diligently to develop and implement a new system through which military officers can self-nominate their experiences on a publicly available Web site, and those experiences are then assessed by the Joint Staff J1 Manpower and Personnel Directorate for validity under the new definition for joint matters.

These efforts have begun to reshape the nature of the idea of joint duty in the military lexicon, and over time will influence and alter decisions about career trajectory by officers. But a more comprehensive assessment is needed of the nature of a joint assignment and the experiences that will best equip the future military for partnering activities not only within DOD itself, but also with governmental and NGOs external to DOD. Assignments that lie within a grey area under the new current definition for joint matters are liaison officer and exchange billets. Unless personnel serving in these positions are detailed from a joint command under a previously existing JDAL billet, they often are not seen to meet the requirement for achieving unified action, even under the new definition for joint matters. Thus, Service prioritization for joint duty assignments will continue to reflect the staff-centric model for joint assignments created by the original Goldwater-Nichols legislation.

other types of assignments not currently considered joint serve to embed participants directly within a partner organization and thus expose them to core skill sets and culture

Duty on a joint staff benefits a Servicemember in many ways, both substantively and with respect to the military promotion process. Officers in joint tours become familiar with their fellow Services and experience first-hand the process through which joint forces are requested and then utilized by combatant commanders to fight the country's battles and to support national security objectives more broadly. The staff-centric nature of the Goldwater-Nichols model has greatly enhanced the power and depth of the combatant commands as well as the Joint Staff.

Other types of assignments not currently considered joint serve to embed participants directly within a partner organization and thus expose them to the core skill sets and culture of that organization. These assignments are deemphasized by Service assignment policies because of the nature of the Goldwater-Nichols model and the types of assignments eligible for joint credit. For instance, the Air Force assigns air liaison officers to Army units, where they serve within and alongside those units to facilitate and coordinate close air support training and execution in conjunction with aviation units. This approximately 300-officer commitment is one that the Air Force struggles to meet, in part because those officers do not receive joint credit despite their complete immersion in an Army organization.[3] Similarly, one of the more effective cooperative endeavors between the Army and Navy has been the incorporation of Army Ground Liaison Officers (GLOs) who deploy aboard aircraft carriers in support of operations in Iraq and Afghanistan. GLOs have served with Air Force units for many years, but their incorporation aboard aircraft carriers is a recent development, born of a need for closer coordination between Navy aircraft providing close air support and ground component elements. Shipboard GLOs brief flight crews before each combat mission and debrief them on their return, coordinating with ground units to optimize

U.S. Coast Guard (Matthew Schofield)

Coast Guard deputy commandant for operations briefs press on Interagency Ocean Policy Task Force

U.S. Navy (Edwin L. Wriston)

U.S. and UN officials discuss refugee issues with representatives of Iraqi Ministry of Displacement and Migration

the air support the carrier air wing provides. Despite being some of the most knowledgeable officers in the Army with respect to naval aviation procedures and Service culture, GLOs typically do not receive joint credit.

Numerous Personnel Exchange Program (PEP) partnerships exist through which military personnel serve or exchange with other U.S. Services as well as foreign militaries. A Navy pilot, for instance, who serves and deploys with an Air Force unit through the program will likely possess substantially greater familiarity with Air Force operations and structure than would be gleaned from the typical joint duty assignment on a multi-Service staff, and thus be all the more qualified to serve in a billet that requires oversight of coordination and interoperability between both Services. Officers who serve as Legislative Fellows attached to Member offices or committee staffs on Capitol Hill, or in think tanks under the Federal Executive Fellows program, also do not receive joint experiential or educational credit under the current construct for determining joint duty assignments, despite receiving substantial exposure to national security and interagency process issues.

Because many direct exchanges between partner organizations already exist, the broadening of joint credit to "partnering credit," or an addition of partnering credit as a formal qualification under the military personnel system, could continue to build the military's capacity to partner with external organizations without undoing the important structures and processes that have developed under the Goldwater-Nichols construct. In the case of personnel exchanges, familiarity rarely breeds contempt. With few exceptions, participants typically return to their organization of origin with newfound respect and appreciation for their host agency or organization, and a vastly improved knowledge of its procedures and organizational culture. Greater emphasis on exchanges, with a close eye on preservation of key core warfighting skill sets, will result in a military, and a national security community more broadly, that is more interoperable, more joint, and less parochial.

Foreign Language Training

A useful analogy for building partnering capacity in an individual and an organization more broadly can be taken from one of the most important educational components of DOD's current partnering strategy: foreign language training. Two broad, differing approaches to studying foreign language could be taken, just as two general approaches to defining joint assignments are possible. An individual could study a wide array of most or all languages that might be of utility, learning basic phrases and briefly immersing in the culture of each one. A second strategy would be to focus on only one or two languages, despite the fact that one may eventually work in a job requiring engagement with other countries and cultures than those studied. Longer term immersion in a foreign culture, with exposure to its language and lexicon, is useful not only to better understand that specific country and its people, but also to learn strategies for integrating into a different environment. This exposure prepares officers to effectively incorporate the contributions of external actors upon return to their organization of origin. Both approaches provide benefits, and an ideal exposure to foreign cultures and foreign organizational cultures more broadly would probably incorporate a combination of both techniques.

DOD has already made substantial efforts to prioritize and allocate additional resources to language training in recognition of the utility of foreign language capacity in meeting its current and foreseen mission requirements. The 2005 DOD Defense Language Transformation Roadmap (DLTR) suggests that "[l]anguage skill and regional expertise are not valued as Defense core competencies yet they are as important as critical weapons systems."[4] An important element of the DLTR is the extension of foreign language training beyond its traditional place in the Foreign Area Officer (FAO) and cryptologic communities. The foreign language training policies that the DLTR has initiated are similar in some respects to those utilized by many North Atlantic Treaty Organization (NATO) militaries and other allies, for whom speaking a foreign language, especially English, is often seen as an unquestionably mission-critical core competency. Most NATO militaries offer language training not only to specialized personnel dealing with foreign relations issues, but also more widely to all officers who serve in combat arms units. Furthermore, periodic refresher and immersion courses are offered for officers who have received language training. The DLTR seeks to leverage existing language capabilities within the U.S. military and to reach out to "heritage" speakers of second languages in the United States for recruitment, especially in strategic languages for which DOD has "current and projected requirements."[5]

In finance, *portfolio theory* refers to the idea that diversification should be utilized to lower aggregate risk.[6] A version of this same logic has led the military to broaden its language training portfolio, ensuring that foreign language capabilities are both more prevalent in the force and more diverse, focused on but not limited to identified languages of particular strategic importance.

In future years, the military may be able to leverage its organic foreign language capabilities by training more of its existing second language speakers, along with personnel who have received formal DOD language training and completed language-utilization tours, to serve as teachers. This idea of training the trainers was the genesis of the Navy's original strategy in creating the Fighter Weapons School, "Top Gun," to create tactics instructors who then taught those tactics to personnel at their units of origin. The result was a substantial increase in the overall tactical proficiency of the organization. Because of the importance of allowing for diversity and individual choice in language study, such a process might best be managed at the mid-echelon command level rather than the unit level.

longer term immersion in a foreign culture, with exposure to its language and lexicon, is useful to learn strategies for integrating into a different environment

More broadly, because of the diverse array of capabilities required of the modern full spectrum warrior, no single individual can specialize in all relevant areas. Instead, a wider range of organizational and educational experience could be leveraged through a more formalized system through which each officer exposed to a relevant discipline is then expected and encouraged to communicate and teach those skill sets to others upon returning to his or her operational unit. Just as we ask ourselves whether we could be training our own personnel more effectively for 21st-century missions, we should also examine the concomitant processes used by DOD for training allied and partner militaries.

Foreign Military Assistance Programs

Substantial resources are devoted, by DOD and other agencies such as the Department of State, both to train foreign military personnel and to build the capacity of those militaries to partner and operate with our own. In a report highlighting the growing importance of security assistance and advocating the creation of a permanent Army Advisor Corps, John Nagl cites the Counterinsurgency Field Manual, which states that "while [foreign internal defense] has been traditionally the primary responsibility of the special operating forces . . . *training foreign forces is now a core competency of regular and reserve units of all services.*"[7] How well does our current system for educating and training our own military personnel prepare them for this teaching mission? Additionally, given that poorly conceived or executed training programs that strike foreign participants as excessively condescending or didactic can engender long-term animosity while teaching short-term skills, how do we best develop capacity and interoperability of our foreign partners while simultaneously increasing our own? Such questions regarding efforts to build integrative and partnering capacity within DOD should be considered with a view to the message communicated by the aggregate perception of our nation's many efforts in this arena.

The United States devotes substantial resources to training and education programs for foreign military officers, and these programs have proven critically important to U.S. ability to operate with foreign allies. In fiscal year (FY) 2008, the International Military Education and Training (IMET) program was funded at approximately $80 million to train nearly 8,000 foreign military officers and related civilian personnel in programs both within the United States and abroad. The Foreign Military Financing Program, which like the IMET program is funded by the State Department but administered by DOD, was funded at approximately $4.5 billion in FY 2008, and supports foreign purchase of both "defense articles and services (to include training)."[8] Section 1206 of the 2006 National Defense Authorization Act provides DOD authority to train and equip foreign forces for capacity-building purposes. It was funded at $293 million for FY 2008, and its authority has been extended through FY 2011. The training supported by these programs, which are but three of a wide range of security cooperation initiatives, is critical to building capacity within our foreign partners.

Some programs also exist to provide U.S. military personnel with language instruction and cultural immersion abroad, many of which are tailored to the military's FAO programs. Although many U.S. forces are stationed abroad, opportunities for dedicated immersion training in foreign cultures, especially in regions of strategic interest, are much more limited. Many of the IMET-funded programs offer short-term immersion opportunities in the United States to foreign officers, who typically are sent because they are perceived to have the highest command potential within their cohort of officers in their own service. By expanding opportunities for reciprocal short-term exchanges, U.S. combat arms officers can improve their knowledge of foreign militaries and cultures or refresh foreign language skills on a timeline that allows maintenance of warfighting skills in their core specialty. The Marine Corps has recently begun an experimental Short-Term Exchange Program as a complement to its longer running PEP, which has expanded from 31 to 36 Active-duty billets in the past 5 years.[9]

training and education programs for foreign military officers have proven critically important to U.S. ability to operate with foreign allies

Return on investment in building capacity in foreign partners is notoriously difficult to enumerate and calculate, especially for nonreciprocal programs. Exchange-based security cooperation programs offer a twofold benefit. First, because of the reciprocity of these programs, calculations of return on investment are somewhat less complex, as both participating organizations simultaneously build their own partnering capacity. Second, this desire for reciprocity communicates a key message to our foreign partners. In an excellent study by the late sociologist Charles Moskos (which should be mandatory reading for anyone working on military security cooperation or partnering issues), the author and his team interviewed a range of foreign military officers to examine the effect of their training on perceptions of the United States.[10] He quotes a Canadian officer who stated that "the American attitude is you need us, we don't need you."[11] Reciprocal exchanges have the advantage of implicitly communicating the message that the United States equally values the exposure of its own personnel to other countries and cultures. Because we are more geographically isolated than many of our allies, developing knowledge of other cultures and languages is in some ways an uphill battle, and this is a perception among foreign officers that Moskos additionally notes.

The range of organizational familiarity and partnering skills required of modern officers is simply too great for any one individual to possess in-depth awareness in all relevant fields, especially given the critical importance of maintaining warfighting skills in combat arms officers' areas of core competency. A train-the-trainers portfolio theory approach to building these capacities would be facilitated by a further expansion of the definition of *joint*, or a revised interpretation of the 2007 legislation, to include all liaison and exchange assignments that occur outside an officer's area of core competency. A restriction on consideration of intra-Service assignments was lifted by the 2007 changes to Title 10. For instance, a Navy surface warfare officer, submariner, or pilot serving as a liaison with a SEAL team might be eligible for joint credit if the nature of his assignment were deemed suitable to afford the officer significant experience with joint matters. The 2007 legislative changes allow joint credit to be accrued "via duties with DOD, interagency, non-governmental, or international organizations and include long-term assignments or brief periods of intense joint operations."[12] Many such assignments are not currently eligible for joint credit, however, because of the interpretation of the legislation's requirement that these assignments be "related to the achievement of unified action." "Forging a New Shield," the report of the Project on National Security Reform (PNSR), argues that "the system is grossly imbalanced. It supports strong departmental capabilities at the expense of integrating mechanisms."[13] Expanded use of interdepartmental and foreign exchanges would serve as a useful integrating mechanism, breaking down cultural barriers and improving interoperability.

The 2007 legislative changes to Goldwater-Nichols also set the stage for a greater role for organizations that might serve as

interagency planning fora, as suggested in the PNSR report. Both U.S. Southern Command (USSOUTHCOM) and U.S. Africa Command have structured their organizations to improve capacity for interagency and multinational partnering. Both organizations have moved beyond the traditional model of a State Department Political Advisor to incorporate a State Department civilian deputy to the combatant commander who, alongside a military deputy, exercises the full responsibility and authority commensurate with that position. Liaisons from numerous governmental agencies that are stakeholders in the region are incorporated seamlessly within the organizations' partnering directorates. The traditional Goldwater-Nichols model caused resources and human capital to accrue at the combatant commands. Because of the requirement, until recently, to serve in a designated JDAL billet to accumulate joint credit, top performing officers have typically been required to serve within Joint Staff structures to remain viable for promotion, and the resultant improvement in coordinative capacity of the regional and functional combatant commands has been crucial to the U.S. ability to execute joint operations in the post–Cold War era.

When passed by Congress, the Goldwater-Nichols model was tailored to the realities of the Cold War environment. Since then, national security leaders have been recommending changes that reflect the greater need for integrative mechanisms in the post–Cold War era. Admiral James Stavridis, while USSOUTHCOM commander, made efforts to offer the resources and expertise of the command's headquarters as a "velcro cube" for representatives from other agencies, as collaborative interagency planning and coordination are key to U.S. Government implementation of its strategy in that theater. Through the establishment of a partnering directorate headed by a Senior Executive Service–level DOD civilian, and the creation of a public-private cooperation program that seeks to coordinate with NGOs and private sector stakeholders, USSOUTHCOM seeks to incorporate consideration of the three contributors to a sustainable security strategy—defense, diplomacy, and development—in an integrative forum. The expansion of the definition of joint matters in the 2007 legislation, however, potentially set the stage for the establishment of integrative mechanisms and organizations outside of the DOD structure specifically, within which military officers plan and coordinate alongside other stakeholders from both within and outside the government to implement the National Security Strategy.

improvement in coordinative capacity of the regional and functional combatant commands has been crucial to the U.S. ability to execute joint operations in the post–Cold War era

Challenges of the Modern Era

Director of National Intelligence Dennis Blair cited the risks posed by the present economic crisis as the primary security risk currently facing the United States. These threats include "regime-threatening instability," testing the ability of the United States, in conjunction with partner nations, to meet challenges posed by failing or failed states, and multinationally shared threats such as piracy and cyber attacks that originate or become manifest in the global commons. The conduct of stability operations, codified as a core mission of DOD in Directive 3000.05, is especially dependent on effective partnering with external agencies, countries, and organizations in confronting these risks. Among other measures, DOD Directive 3000.05 calls

Iraqi supervisors and PRT members oversee construction of engineering college in Kut, Iraq

U.S. Air Force (Thomas A. Coney)

on the Under Secretary of Defense for Personnel and Readiness to:

5.3.4. Develop opportunities for DOD personnel to contribute or develop stability operations skills by:

5.3.4.1. Undertaking tours of duty in other U.S. Departments and Agencies, International Organizations, and NGOs;

5.3.4.2. Participating in non-DOD education and training programs relevant to stability operations; and

5.3.4.3. Learning languages and studying foreign cultures, including long-term immersion in foreign societies.[14]

DOD's guidance on stability operations reflects the fact that the demands of modern conflict and security cooperation are causing skill sets that have traditionally been required primarily of the military's FAOs to become more relevant to combat arms officers. In a spring 2009 article in the *Naval War College Review*, Admiral Stavridis and Captain Mark Hagerott argue that because of the increased requirement for officers who are familiar with joint, interagency, and international operations, the Navy must develop three broad fields for officers, each of which would have opportunities for command of operational units, thus preserving the Navy's "culture of 'command at sea.'"[15] The three tracks they propose are joint/interagency, technical, and general operations. They suggest that officers serving in the general operations community would ideally serve in more than one platform community within the Navy—for instance, a tour on a surface ship prior to attending flight school or nuclear power school. Technical track officers would receive specialized scientific and technical educational opportunities and would be well positioned for command of large functional combatant commands, such as U.S. Transportation Command or U.S. Strategic Command. The joint/interagency track would incorporate educational aspects found in FAO programs such as in-depth language training and graduate education in regional or related issues, coupled with tours in at-sea command assignments. The implementation of such a plan would likely necessitate reevaluation of the FAO programs as well, and the manner through which the military utilizes and integrates officers who excel in those communities. Avenues for reintegration of FAOs into their communities of origin would allow these officers to continue beyond the terminal colonel/captain rank to which most FAOs are limited, and permit DOD to utilize some of the military's most experienced officers in joint and interagency issues in positions of increased responsibility.

As our world has become more globalized and interdependent, so too have agencies of the U.S. Government become more dependent on each others' expertise and that of their allies, thus testing the traditional model for educating DOD's military officer corps. Some other recent innovations within the military's personnel system offer promise with respect to efforts to further develop integrative capacity by preparing officers for the challenges of coming years. The Navy's recent "Career Intermission Pilot Program" allows 20 officers and 20 enlisted personnel to depart Active duty for 1 to 3 years, and return with an adjustment made to their date of rank such that they could continue to compete for promotion on equal terms with their new peers.[16] The primary rationale for this type of program, providing an off-ramp and on-ramp for service, was to make military duty more compatible with the requirements of parenthood, especially for female officers.

avenues for reintegration of Foreign Area Officers into their communities of origin would allow these officers to continue beyond the terminal colonel/captain rank to which most are limited

Yet substantial interest in the program has been noted from other groups—for instance, Navy SEALs, whose high operations tempo and interest in relevant language and educational experiences serve as key incentives. One of many advantages of broadening such a program would be the creation of a means for individual Servicemembers to choose their own educational opportunities that they believe will best assist them in effectively contributing within their career path upon their return to the military. Andrew Exum, a former Army Ranger and Fellow at the Center for a New American Security, noted that "to acquire the skills that would make me an effective counterinsurgent, I had to leave the Army." After combat tours in Afghanistan and Iraq, he left the military and completed a Master's degree in Middle Eastern studies at the American University in Beirut along with Arabic language study in Cairo. Exum, who founded the counterinsurgency blog *Abu Muqawama*, is completing a Ph.D. through King's College London, and notes that if an on-ramp existed for a return to the Army, he would consider returning for the chance to apply his recent educational experience to the tactical environment. Such methods for providing a more flexible and market-based means for military officers to develop in areas they perceive would help them better contribute to the military would result in a more agile, responsive system for building human capital at minimal additional cost.

The development of "Human Terrain Teams" in Afghanistan and Iraq represents an effort to incorporate individuals with rigorous academic backgrounds, particularly in anthropology, to assist units in the field at the tactical level in achieving counterinsurgency goals, and demonstrates the recognized utility of nontraditional fields of study for the accomplishment of tactical military objectives. Graduate education in these fields is often not offered through the military's own institutions for postgraduate education, and must be pursued through civilian institutions. Service academies currently limit the number of officers permitted to pursue civilian graduate education following graduation. The Navy's Scholarship Program allows approximately 20 graduating Midshipmen to participate in civilian programs that afford a full or partial scholarship, and the other Service academies have similar programs facilitating civilian graduate school for a small number of officers. Participating Midshipmen incur a service obligation of 3 years for every year of school, served concurrently with other obligations. By limiting this number to 20, the Navy reduces the return on investment of its expenditure on the university education of its officer candidates. Allowing graduating officers and midgrade officers to accept scholarships for graduate education increases the human capital of the officer corps at limited cost to the Navy and better prepares them for the complex national security challenges of the modern era.

The 2007 legislative changes that altered the definition of joint matters have begun to diversify the types of experiences considered joint and contribute to the military's integrative capacity. No accompanying change was made to the JPME system, however. Other educational experiences that contribute to

an officer's ability to integrate with external stakeholders to best achieve unified action should be considered for JPME credit. Right now, the military's war college system is the only source for the credit generally required for selection to unit command and that serves as a component of a Joint Qualified Officer designation, now a requirement for promotion to flag rank. DOD's implementation of the 2007 legislation has created a Joint Qualification System that seeks to better categorize and differentiate levels of joint experience and qualification, with four separate levels replacing the previous binary "yes or no" of designation as a Joint Qualified Officer. Similarly, a broader range of educational experiences that prepare officers to effectively operate with "other departments and agencies of the United States . . . the military forces or agencies of other countries . . . and non-governmental persons or entities" should be evaluated and categorized under revised JPME criteria. Civilian graduate school programs in relevant disciplines, and especially graduate school experience that takes place abroad (such as the military's Olmsted Scholarship program), should be considered for joint credit under a revised JPME framework to better capture how aggregate educational experience prepares an officer to effectively collaborate with external stakeholders in the newly redefined broader joint environment.

Organizational Reform

A reflection of the utility of enhanced educational opportunities for military officers can be perceived in the role of a number of Army warrior-scholars in reviving the historical lessons of counterinsurgency in recent years and helping to turn the tide of America's efforts in Iraq. In his analysis of the "surge" in Iraq in his recent book *The Gamble*, Tom Ricks notes that officers who had taken substantial time in their careers to study and reflect on the lessons of the past, among them General David Petraeus, Brigadier General H.R. McMaster, Lieutenant Colonel John Nagl, and numerous others, many of whom have taught in West Point's Social Sciences Department, were crucial to innovating and engineering a change in the 2007 Iraq strategy that reversed a deteriorating cycle of violence and insurgency.[17] The core document that distills these rediscovered lessons relevant to the war efforts in Afghanistan and Iraq, Field Manual 3–24, *Counterinsurgency*, draws on the writings of T.E. Lawrence and notes a number of "Paradoxes of Counterinsurgency Operations." Among these are cautions that "sometimes, the more force is used, the less effective it is," "many important decisions are not made by generals," and "some of the best weapons for counterinsurgents do not shoot."[18] Another classic paradox in international relations theory more broadly is the "security dilemma."[19] As a state builds its defenses to enhance its own security, it is perceived to threaten the security of others, causing them to build their defenses, resulting in arms races and diminished collective security. Thus, attempts made by states to increase their own security can in fact diminish it.

International relations theorists suggest that such destructive loops can only be mitigated through efforts to improve communication and to signal nonhostile intent in manners that can be interpreted by other states as such. Efforts to improve the U.S. military's capacity to partner with foreign actors in confronting mutual threats to security posed by failing states and other shared threats arising in the global commons, while at the same time preserving core warfighting skill sets, will have the additional effect of encouraging similar efforts in allies and potential allies. If we are unable to do so, a failure to prepare to collaborate effectively with other states and confront mutual threats may prove not a paradox, but instead a self-fulfilling prophecy. **JFQ**

NOTES

[1] See, for example, James R. Locher III et al., *Forging a New Shield* (Washington, DC: Project on National Security Reform, November 2008); Clark A. Murdock et al., *Beyond Goldwater-Nichols: U.S. Government and Defense Reform for a New Strategic Era, Phase 2 Report* (Washington, DC: Center for Strategic and International Studies, July 2005); Clark A. Murdock and Richard W. Weitz, "Beyond Goldwater-Nichols: New Proposals for Defense Reform," *Joint Force Quarterly* 38 (3d Quarter 2005); and Martin J. Gorman and Alexander Krongard, "A Goldwater-Nichols Act for the U.S. Government: Institutionalizing the Interagency Process," *Joint Force Quarterly* 39 (4th Quarter 2005).

[2] Department of Defense (DOD), *Quadrennial Roles and Missions Review Report* (Washington, DC: DOD, 2009), 36, available at <www.defenselink.mil/news/Jan2009/QRMFinalReport_v26Jan.pdf>.

[3] Travis D. Rex, *The Time Is Now: Advocation for a Professional Air Liaison Officer Corps* (Maxwell Air Force Base, AL: Air University, 2007), 12.

[4] DOD, *Defense Language Transformation Roadmap* (Washington, DC: DOD, January 2005), 5.

[5] Ibid., 5–6.

[6] See Harry M. Markowitz, "Foundations of Portfolio Theory," *Journal of Finance* 46, no. 2 (June 1991).

[7] John A. Nagl, *Institutionalizing Adaptation: It's Time for a Permanent Army Advisor Corps* (Washington, DC: Center for a New American Security, June 2007), 4; and *U.S. Army/Marine Corps Counterinsurgency Field Manual* (Chicago: University of Chicago Press, 2007), 6–3, emphasis added in Nagl, 4.

[8] Defense Institute of Security Assistance Management, "Introduction to Security Cooperation Management," training presentation, Dayton, OH, available at <www.disam.dsca.mil/Research/Presentations/2%20introsc.ppt>.

[9] Brigadier General Richard M. Lake, USMC, Director of Intelligence and Senior Language Authority Headquarters, United States Marine Corps, statement before the House Armed Services Subcommittee on Oversight and Investigations on September 10, 2008, concerning United States Marine Corps Foreign Language and Cultural Awareness Efforts, Washington, DC, available at <http://armedservices.house.gov/pdfs/OI091008/Lake_Testimony091008.pdf>.

[10] Charles Moskos, *International Military Education and Multilateral Military Cooperation* (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, January 2004), 19, available at <www.au.af.mil/au/awc/awcgate/army/ari_intl_pme.pdf>.

[11] Ibid.

[12] DOD, "Joint Qualification System Implementation Plan," March 30, 2007, 5, available at <www.defenselink.mil/transformation/documents/JOM-JQSImplementationPlan.doc>.

[13] Locher et al., vi.

[14] DOD Directive 3000.5, "Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations," November 28, 2005, available at <www.thomaspmbarnett.com/weblog/archives2/002755.html>.

[15] James G. Stavridis and Mark Hagerott, "The Heart of an Officer: Joint, Interagency, and International Operations and Navy Career Development," *Naval War College Review* 62, no. 2 (Spring 2009), 35.

[16] See Chief of Naval Operations, "Career Intermission Pilot Program," March 31, 2009, available at <www.npc.navy.mil/NR/rdonlyres/99DDD215-786B-496D-88B4-C69D1FA63721/0/NAV09095.txt>.

[17] Tom Ricks, *The Gamble: General David Petraeus and the American Military Adventure in Iraq, 2006–2008* (New York: Penguin, 2009), 231.

[18] *U.S. Army/Marine Corps Counterinsurgency Field Manual*, 48–50.

[19] See Charles L. Glaser, "The Security Dilemma Revisited," *World Politics* 50, no. 1 (October 1997).

The Caucasus is an important area for the [United States] *and its partners. Caucasus nations actively support Operation* Iraqi Freedom *and ISAF* [International Security Assistance Force] *by providing both with troops and over-flight access for critical supply lines from* [US]*EUCOM to the* [US]*CENTCOM* [area of responsibility]. *They provide alternative energy sources from the Caspian Sea basin and alternative routes of access to Central Asian energy reserves. It is an important region for European energy diversification.*

—General Bantz J. Craddock, USA
Commander, U.S. European Command[1]

Opposition supporter at rally demanding President Mikhail Saakashvili's resignation in Tbilisi, Georgia

AP Images (Shakh Aivazov)

Unintended Strategic Consequences of Security Assistance in the South Caucasus

By MICHAEL D. MIHALKA *and* MARK R. WILCOX

While Georgia may be more prosperous than it was before the Rose Revolution of 2003, it is no stronger or more democratic. Georgia was never really the "beacon of liberty" that President George W. Bush called it in 2005.[2] In fact, even though the South Caucasus as a whole saw substantial economic growth in the 1990s, none of the countries therein saw any movement toward greater liberal democracy. Moreover, civil-military relations have deteriorated, and the risks of internal and external violence have arguably increased. Given these trends, has the large increase in security assistance to the South Caucasus actually decreased regional stability? The Russian-Georgian war of 2008 suggests that it has.

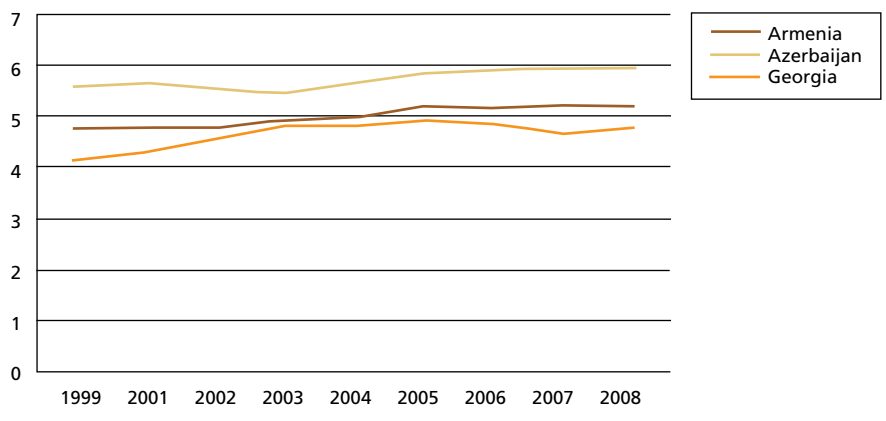
This article examines the trends in liberal democracy in the South Caucasus in light of economic development. It relates these trends to regional changes in civil-military relations and the prospects for violence in the region. It then assesses the extent to which security assistance has contributed to stability in the region. Finally, recommendations are made about how future security assistance should be structured.

Economic Development

Economic development consistently correlates with liberal democracy, although some scholars question whether there is a causal relation. A recent survey article concludes that "[s]trong evidence supports the claims that democracy is more likely in more developed countries and that regime transitions of all kinds are more likely during economic downturns. Very few of the other arguments advanced in the transitions literature, however, appear to be generally true."[3] Another scholar asserts that economic development does not cause democracy but rather the same factors that lead to democracy also help the economy.[4] Thus, liberal democracy in the South Caucasus should have been on the ascent in the decade prior to the global economic crisis in 2008. All the countries in the region saw substantial economic growth during that decade. Growth rates from 2000 to 2007 were between 5 and 10 percent for Georgia, 10 and 15 percent for Armenia, and 10 and 35 percent for Azerbaijan.[5]

Despite theoretical predictions, there has been no increase in liberal democracy in the region, but rather a decline, as seen in figure 1 (*lower* scores represent *more* "democracy"). Moreover, although many political figures have touted the democratic advance for President Mikhail Saakashvili's regime, the democratic situation has deteriorated.

Figure 1. Democracy Scores in the South Caucasus, 1999–2008



Source: Freedom House, Nations in Transit 2009, available at <www.freedomhouse.org/template.cfm?page=485>.

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Freedom House in its Nations in Transit project scores Georgia at 4.17 in 1999 but at 4.93 in 2009 on a scale of 1 to 7.[6] That score is a composite of several factors including electoral process, civil society, independent media, national and local democratic governance, judicial framework and independence, and corruption. Although there is a relatively thriving civil society in Georgia, there are few checks on executive authority. As noted by Nations in Transit, "[d]ue to the absence of any real constraints on the president, the authorities' reluctance to engage in dialogue with the opposition, and unanswered questions concerning the August war with Russia, the rating for national democratic governance worsens from 5.75 to 6.00."[7]

There are several possible explanations for the failure of democracy in the South Caucasus, but three seem compelling: the nature of economic growth, the corrosive effect of unresolved conflicts, and the unfortunate geopolitical position of the region from the point of view of democracy.

despite predictions, there has been no increase in liberal democracy in the region, but rather a decline

"Oil Curse"

In the introductory essay to the Nations in Transit 2008 report, the authors link the rising price of oil to the decline of democracy in the former Soviet Union.[8] They note that the "model of pursuing economic growth while eroding the independence of critical institutions has been adopted by three oil-rich states in the former Soviet Union: Azerbaijan, Kazakhstan, and Russia." The decline in democracy in these countries has important effects on their neighbors. In particular, Georgia had begun to rely on transit fees from pipelines constructed to move Azerbaijani hydrocarbons to Western clients. In contrast, economic growth in Armenia has been driven by remittances and economic aid.[9] A construction boom has recently fueled Armenia's economy.

There are several possible explanations why the recent economic growth has not led to an increase in liberal democracy in the South Caucasus. The literature on the "oil curse" suggests that countries overly reliant on external sources of revenue become so-called rentier states.[10] Instead of producing goods with a corresponding change in structure of society, rentier states develop governments that become increasingly distant from society and hence more autocratic. By this account, all three states in the South Caucasus could be considered rentier: Azerbaijan relies heavily on hydrocarbons, Armenia on external remittances, and Georgia progressively on transit fees. Contrasting the growth experience of Estonia and Georgia since 1990, poor governance, failure to adopt appropriate institutional reforms, and poor policy have held Georgia back.[11]

Instead of a direct relationship between economic development and liberal democracy,[12] some scholars argue that economic growth leads to a more educated public and a larger middle class, and hence to the development of a civic culture that values trust and competence.[13] These factors in turn increase support for democratization. Economic growth followed by an economic crisis (such as the global financial crisis of 2008, which also led to a dramatic decline in the price of oil) leads to a rapid transition from authoritarianism to democracy. So far no such transition has occurred in the South Caucasus, perhaps because economic growth was not sustained long enough to transform societies in those countries. As recently as 1995, 60 percent of Georgia was below the poverty line, in 2002, the level of poverty was 52 percent, and in 2006, the level had fallen to 39 percent. Curiously, even through the early 2000s, unemployment did not decline despite economic growth.[14]

Armenia has also seen a significant decrease in poverty from 1999 to 2005 largely due to a growth rate twice what was expected.[15] In 1999, 56.5 percent were poor, while this figure dropped to 25.6 percent by 2005. An increase in remittances has led to a construction boom primarily in housing. Moreover, Armenia, along with Georgia, has proven an easy place to do business. Armenia ranked 43 to Georgia's 11 among 183 countries assessed in terms of the ease of doing business.[16] This compares with Azerbaijan's rank of 38.

The reduction of poverty in both Georgia and Armenia points toward the development of a middle class. However, there has been no corresponding increase in the level of liberal democracy. Some suggest that political instability might result, especially if the growth is followed by a sharp economic decline. Certainly Armenia and Georgia have been afflicted by a series of demonstrations mostly by opposition figures against the validity of the elections in respective states. Opposition groups went to the streets in Armenia to protest the February 2008

U.S. Air Force (Adam M. Stump)

Vice Chairman of Joint Chiefs of Staff General James Cartwright meets with Georgian President Mikhail Saakashvili in Tbilisi

presidential elections.[17] Several demonstrators were killed when the government cracked down on March 1. Georgia, too, has seen large-scale demonstrations. Three months of unrest called for the resignation of Saakashvili starting in April 2009. Over 250,000 people showed up in Tbilisi for the first day of protest. On Georgian Independence Day, May 26, over 100,000 demonstrators took part. Earlier, in November 2007, the government violently suppressed opposition demonstrations,[18] and then used the excuse of an attempted coup to declare a state of emergency and prohibit news broadcasts except by the state-run television station for 15 days.

Ironically, the real progress that Georgia and Armenia have made in economic liberalization has led to decreased political stability. As the governments become increasingly authoritarian and repressive, the economic boom is increasing the numbers within society who desire a greater political voice. Demonstrations against the government often lead to violence.

Economic growth has also increased political stability and decreased violence, according to measures used by the World Bank.[19] Figure 2 provides an assessment of political stability that positively tracks economic growth. The World Bank defines this measure as "capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism."[20] For the South Caucasus, this measure is a weighted average of seven to nine over sources. The *y*-axis gives a percentile rank comparison to all countries. Luxembourg was assessed as 100 in 2008, meaning that it was the most stable country in the database, and Afghanistan was assessed as 1, the least stable. Thus, prior to the Rose Revolution in 2003, Georgia was among the 10 percent least politically stable countries; afterward, it improved to the 20 percent least stable. In 2008, 16 percent of the countries in the database were assessed as less stable than Georgia. Its score in 2008 was similar to those for India, Indonesia, and Liberia. Azerbaijan's scores hovered around 20 percent throughout this period while Armenia saw an increase to the mid-40s.

Conflict

The extent of liberal democracy is also strongly associated with both external and internal violence. One of the few laws in political science is that consolidated liberal democracies do not go to war with each other, even though liberal democracies are not necessarily more peaceful than their authoritarian counterparts. Edward Mansfield and Jack Snyder conclude:

Statistical evidence covering the past two centuries shows that in this transitional phase of democratization, countries become more aggressive and war-prone, not less, and they do fight wars with democratic states. In fact, formerly authoritarian states where democratic participation is on the rise are more likely to fight wars than are stable democracies or autocracies.[21]

This analysis suggests that moving a state along the path from authoritarianism to liberal democracy actually *increases* the likelihood of external violence. In the South Caucasus, Georgia and Armenia would be considered transitional democracies, even though they are becoming increasingly authoritarian and Azerbaijan would be considered authoritarian. Thus, attempts to push them toward greater democracy will increase the likelihood of violence unless something tangible is done to address security concerns.

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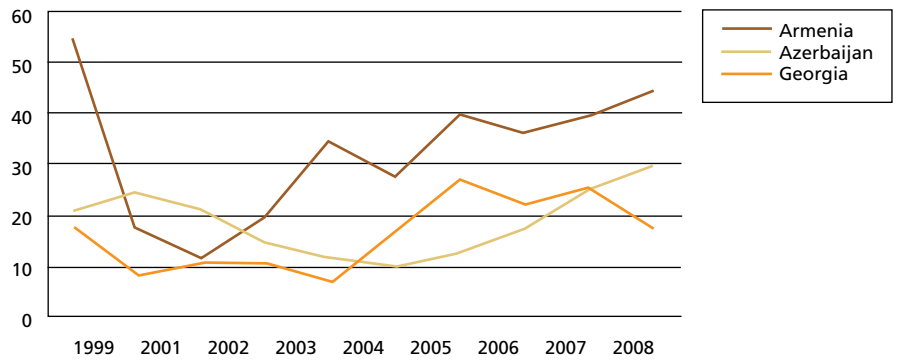
A similar relationship exists for internal violence. Authoritarian and liberal democratic countries are associated with the least amount of internal violence, transitional countries the most.[22] From this, we expect Armenia and Georgia to be much more afflicted with internal violence than Azerbaijan. Moreover, newly emergent states tend to suffer from a higher likelihood of internal violence. Institutional weakness has made internal violence much more likely in the South Caucasus because the state, especially at the beginning in Georgia and Azerbaijan, was too weak to deal with the predatory tendencies of local warlords.[23]

In addition to political violence associated with the political process in the South Caucasus, open and unresolved conflicts have adversely affected the development of democracy. For Armenia and Azerbaijan, the conflict over Nagorno-Karabakh continues to dominate domestic politics, while the breakaway regions of Abkhazia and South Ossetia continue to serve as lightning rods for Georgian politics.

Nagorno-Karabakh declared independence from Azerbaijan in January 1992. The Armenian side was largely successful in securing much of Nagorno-Karabakh and the region bordering Armenia as illustrated in figure 3. In May 1994, a ceasefire was signed in Moscow. Leaders in both Azerbaijan and Armenia have lost their positions because of the conflict. The president of Azerbaijan, Ayaz Mutalibov, was forced to step down in March 1992 over the Khojaly massacre, in which several hundred civilians were killed the month before.[24] He was then brought back briefly on March 14 in what has been characterized as a "constitutional coup d'etat."[25]

Figure 2. World Bank Assessment of Political Stability and Absence of Violence/Terrorism, 1999–2008



Source: Daniel Kaufmann, Aart Kraay, and Massimo Mastruzzi, *Governance Matters VIII: Governance Indicators for 1996–2008* (Washington, DC: World Bank, June 2009).

On May 15, the head of the Azerbaijani Gray Wolves, Iskender Hamidov, seized the parliament building and television station and ousted Mutalibov for good. Other units fighting the Armenians also had rushed to Baku to oppose Mutalibov and left the critical Lachin corridor in the hands of only 3,000 defenders.

Azerbaijan elected Albufaz Elchibey president on June 7, 1992. The Azerbaijanis launched an offensive in July and quickly pushed back the Karabakh Armenian defenders. However, it was not Azerbaijanis in the tanks but Russians who in the end thwarted the attacks.[26]

In reaction to the Azerbaijani successes, Robert Kocharian (later president of Armenia) became head of the State Defense Committee of Nagorno-Karabakh. His longtime friend Serzh Sargsian (current head of state of Armenia) assumed responsibility for the logistics of the campaign. Meanwhile, the battle had turned against Azerbaijan, and some saw the defense minister Rahim Gaziev and his main commander Suret Husseinov as working for the Russians. In February 1993, Husseinov left an Azerbaijani unit surrounded and then moved his own forces off the frontlines. When Elchibey tried to sack him, Husseinov ignored Elchibey and moved his troops to Ganje. The Karabakh Armenians exploited the hole in the line.

On June 4, 1993, Elchibey sent troops to disarm Husseinov's forces. They failed. Husseinov then moved on the capital, and Elchibey fled to Nakhichevan. Heider Aliev was voted extraordinary presidential powers on June 24, and on June 30, Aliev made Husseinov prime minister. On October 3, Aliev was elected president with 98.8 percent of the vote. One of his first acts was to disband 33 battalions loyal to the opposition Popular Front, some units of which had worked to oust Mutalibov.

The Karabakh Armenians pressed the advantage as the entire Karabakh front was left uncovered by the Azerbaijani crisis. The Azerbaijanis launched a counteroffensive in January 1994 and recovered substantial territory around Fizuli. The war was at its bloodiest in the first part of 1994 and exhausted both sides. A ceasefire was signed May 12, 1994—without a neutral peacekeeping force.

Figure 3. Area Controlled by Nagorno-Karabakh Republic (NKR)

Husseinov was not yet done using the military to meddle in Azerbaijani politics. On October 4, 1994, Husseinov failed in his coup attempt against Aliev and fled to Russia.

The conduct of the war really shows the politicization of the military on both sides but especially in Azerbaijan. Factions in the Azerbaijani military were responsible for all the changes in the Azerbaijani leadership and failed to carry out their political leaders' commands at critical moments. Aliev exploited the factions within the military to his own political advantage, and his understanding of the inherent danger posed by the military was a major factor in his ability to subsequently stay in power and to pass on that power in 2003 to his son Ilham, who won the presidential election with 76.8 percent of the vote.

The Karabakh issue continues to dominate Armenian politics. In 1997, President Levon Ter-Petrossian saw an opportunity to settle the Karabakh issue based on a phased plan set forth by the Minsk Group, the international body set up under Organisation for Security and Co-operation in Europe auspices to mediate the Karabakh conflict. The Karabakh Armenians in Ter-Petrossian's government resisted. Robert Kocharian was prime minister and Serzh and Vazgen Sargsian were defense and interior ministers, respectively. In the face of this opposition, Ter-Petrossian resigned on February 3, 1998, making him the third president to step down as a result of the Karabakh issue.

Civil-military relations in Georgia have also been highly problematic. The problems created by the breakaway regions of Abkhazia and South Ossetia continue to dominate Georgian politics. Moreover, the toxic relations between Russia and Georgia continue to sour domestic Georgian politics as every couple of years the Georgian government claims that Russia has sponsored a coup against it.

The first president, Zviad Gamsakhurdia, was overthrown in a coup after he tried to abolish the national guard and subordinate it to the interior ministry in August 1991. The Georgian national guard then split, and an antigovernment faction, the *Mkhedrioni* ("Horsemen" or "Knights"), set up an armed camp outside Tbilisi and maintained barricades throughout the city. These groups launched a coup on December 22, 1991, and heavy fighting ensued. On January 6, 1992, Gamsakhurdia escaped to Azerbaijan and then to Armenia, and finally wound up in the Russian breakaway province of Chechnya. Hostilities between pro- and anti-Gamsakhurdia forces continued throughout 1992 and 1993. In pursuit of pro-Gamsakhurdia forces, the government moved forces into the province of Abkhazia in September 1992, but they were driven back. In September 1993, Gamsakhurdia, supported by the regions of Megrelia and Abkhazia, set himself up in the western Georgia town of Zugdidi and captured the port of Poti and other vital transportation links. In a rare act of unity, Russia,

a ceasefire was signed—without a neutral peacekeeping force

Armenia, and Azerbaijan came out against Gamsakhurdia, and Russian troops pushed back his forces. Zugdidi fell on November 6. Gamsakhurdia died under mysterious circumstances on December 31.

A report dated 2004 cites numerous paramilitary groups throughout Georgia that have existed since the early 1990s.[27] Some have a shadowy and occasional relationship with the government. Others are guerrilla groups left over from the civil war or the wars with Abkhazia and South Ossetia. Still others have links to Russia. As late as 2004, the fact that the ministers of defense and interior as well as the heads of the security services were all generals raised real issues of democratic and civil control. Moreover, "it is not possible to speak of successful civil control over militaries while having uncontrolled militaries on the territory of Georgia."[28]

Several coups real and alleged have occurred in Georgia. In October 1998, Colonel Akaky Eliava failed in his attempt to stage a coup against then-president Eduard Shevardnadze. He was granted amnesty but died in unclear circumstances while in police custody in July 2000. Army units also mutinied in 2001 and 2004, primarily over pay.[29]

the government claimed that the opposition had been consorting with the Russians, thus necessitating the state of emergency

Government claims regarding a coup precipitated the 2008 presidential elections. Antigovernment demonstrations were brutally suppressed on November 7, 2007, and the government declared a state of emergency (which lasted until November 16). The government claimed that Russia was backing a coup attempt and expelled three Russian diplomats. It further claimed that the opposition had been consorting with the Russians, thus necessitating the state of emergency.[30]

Civil-military relations in Georgia remain quite strained. The circumstances surrounding the mutiny of a tank battalion in May 2009 are muddy. Around 70 personnel deserted the Mukhrovani base on May 5. The government asserts that Russia intended at a minimum to disrupt North Atlantic Treaty Organization (NATO) exercises and more generally to provoke a coup. Moscow, of course, denied this. In contrast, some opposition figures and military experts claim that the unit had refused orders to put down the ongoing demonstrations.[31]

Whatever the explanation for the army mutiny, the mass desertion does not speak well for the status of Georgian forces. As one Georgian military analyst put it, the "Georgian army has already been destroyed. If the government were to confirm a desertion of this scale, then it would have to admit that for years the money allotted for building up the armed forces was devoured [that is, misappropriated] and that the army has not been built."[32]

Security Assistance

The Georgian attempt to recover South Ossetia in August 2008 raises real questions about the unintended consequences security assistance brings to the region. After 9/11, security assistance increased substantially, particularly to aid countries with counterterrorism. The United States is the leading provider of aid to Georgia and Armenia, with more than $1 billion spent in fiscal years (FY) 1992–2007.[33]

AP Images (Umit Bektas)

Azerbaijani and Turkish officials in Ankara discuss agreement establishing diplomatic relations

U.S. European Command has had several initiatives to train Georgian troops. From 2002 to 2004, the United States spent $64 million in the Georgia Train and Equip Program to train Georgian security forces to fight terrorists, protect pipelines, and further internal stability. Following this, the United States launched the Sustainment and Stability Operations Program to train four battalions of Georgian troops to support the U.S.-led coalition in Iraq. Sixty million dollars was spent in FY 2005 and another $30 million was budgeted for FY 2006. Before the Russian-Georgian war in 2008, the United States was preparing to train the 4th Brigade for operations in Iraq.

Although Washington claims that this training was strictly limited to counterterrorism operations, neither Georgia nor Russia shared that interpretation. The 2006 Georgian National Security Concept makes the following claim:

Georgia's defense capabilities have significantly increased as a result of assistance programs conducted by the United States. The Georgia Train and Equip Program initiated by the U.S. has proved to be a major success in the process of building the modern Georgian Armed Forces. The new Sustainment and Stability Operations Program is advancing Georgia's defense capabilities to a higher level. Units trained under these programs constitute the core of the Georgian Army.[34]

In an August 21 interview with the Associated Press, Georgian defense minister David Sikharulidze responded, "[i]n general, yes," when asked whether U.S. training of his troops would help in a future war. Although this answer was viewed as a huge gaffe and was later recanted by Sikharulidze, the Georgian 2006 national security concept

clearly shows Georgian thinking on the matter.

The Georgians quite simply see any training of their troops as helping them with general defense and are not as sensitive to nuance as Marine Corps Commandant General James Conway. He thought that counterinsurgency skills "aren't very helpful when it comes to main force-type units if there were to be engagement of nations."[35] Moreover, the general stated, "I am very comfortable that what we're doing is very much above board and is commensurate with what the country has said they need to put troops in Afghanistan."[36] General Conway's views are either naïve or disingenuous and reflect the overall problem of aiding countries such as Georgia, which interpret training according to their own national interest.

Some commentators and opposition figures see the Georgian military as largely discredited and discarded after August 2008. Moreover, the military may be increasingly viewed as a threat by the regime. This may explain the rapid dismissal of Sikharulidze after his interview blunder, not so much because it was impolitic but more because Saakashvili wanted to place his "own man" in the defense ministry. He turned to 28-year-old Bacho Akhalaia, deputy minister since December 2008, formerly head of prisons for the interior ministry where his brother serves as head of "constitutional security." Akhalaia's appointment may serve two purposes: to assert greater security service and regime control over the military, and to ensure the military will follow orders even when asked to move against civilians. Or so the former speaker of the parliament and leading opposition figure, Nino Burjanadze, believes: "David Sikharulidze, who was dismissed [as defense minister], would never have carried out an order to use the army against the people. The new minister, [Akhalaia], would do this."[37]

Only the security services seem untouched by the continuing cabinet shuffles in Georgia. As one commentator noted at the beginning of 2009:

successive cabinet reshuffles have left unscathed powerful Interior Minister Vano Merabishvili, whom Subari has implicitly accused of presiding over a death squad that operates outside the law. And Bacho [Akhalaia], a Merabishvili protege who is believed to have provoked a prison riot in March 2006 by his sadistic treatment of prison inmates, has been promoted to deputy defense minister.[38]

Finally, there is the August 2008 war. Saakashvili has made recovery of the provinces of Adjaria, Abkhazia, and South Ossetia a priority. He succeeded in quickly recovering Adjaria without bloodshed. He apparently was talked down from attacking Abkhazia in the spring of 2008. The International Crisis Group reported in June 2008:

[Georgia] *has quietly been making military preparations, particularly in western Georgia and Upper Kodori. A number of powerful advisers and structures around President Mikheil Saakashvili appear increasingly convinced a military operation in Abkhazia is feasible and necessary. The option they seem to favour would aim at regaining control of the southern part of the territory so as to establish at least a temporary partition.*[39]

Azerbaijan also has serious civil-military issues. As noted above, with the exception of Heider Aliev yielding to his son Ilham, the military has been directly implicated in every transfer of power within the state. Moreover, the political leadership continues to make threatening speeches over Nagorno-Karabakh. In March 2008, President Ilham Aliev told reporters that diplomatic efforts were not enough to recover the province. Instead, "to resolve the Karabakh conflict, we have to be strong, we have to be ready to liberate our lands by military means, and we are ready."[40] Such rhetoric is not viewed as idle bombast as Aliev has invested his country's oil money heavily in his armed forces. But some commentators see such an investment as largely wasted. They see a mostly corrupt and unreformed defense ministry and a highly politicized military.[41]

the Georgians quite simply see any training of their troops as helping them with general defense and are not as sensitive to nuance

The Report of the Independent International Fact-Finding Mission on the Conflict in Georgia made a veiled critique of security assistance to the region:

The supply of arms and military equipment as well as the provision of military training to the conflict region were and continue to be a sensitive issue. Even when done within the limits established by international law or by political commitments of a non-binding nature, military support must stay within the boundaries set by common sense and due diligence, keeping in mind both intended and unintended use of the arms and equipment supplied.[42]

Marine instructors in Georgia Train and Equip Program train Georgian army recruits

U.S. Air Force (Dallas D. Edwards)

Table. U.S. Foreign Aid to the South Caucasus (fiscal years, US$ million)

Country	1992–2007 Budgeted Aid[1]	2008 Actual[2]	2009 Estimate[2]	2010 Request[2]
Armenia	1,746.08	62.634	52.3	34.86
Azerbaijan	753.26	26.841	24.946	30.135
Georgia	1,989.64	378.85[3]	309.2[4]	83.05
Regional	38.73	—	—	—
Total	4,436.71	468.325	386.446	148.045
Percentage	13.6	64	67	29

Source: U.S. Department of State, *Congressional Budget Justification Operations, FY2010* (Washington, DC: Department of State, May 12, 2009).

[1] FREEDOM Support Act and Agency budgets.
[2] FREEDOM Support Act and other Function 150 funds. Does not include Department of Defense or Department of Energy funding, funding for exchanges, Peace Corps, or Millennium Challenge Corporation programs in Armenia and Georgia.
[3] Includes Economic Support Funding of $315 million (P.L. 110–329).
[4] Includes $242 million in FREEDOM Support Act funding (P.L. 111–32).

The emphasis here should not be on the perceived value of the security assistance for the country giving it, such as the United States, but on its consequences for the stability of the region. While Washington may have viewed its assistance quite narrowly, the Georgians themselves clearly viewed it as a strong political support and a means to recover lost territory.

The reality of politics in the South Caucasus does not match the enthusiasm of some U.S. politicians for the region. As measured by the standards of the 1995 NATO study, the situation in the region has deteriorated as all of its countries have become more authoritarian. The toxic influence of the unresolved conflicts remains unabated.

The one bright spot has been economic reform. Prior to the 2008 global economic crisis, all of the countries in the region saw spirited economic growth. But in the face of increased authoritarianism, this growth brings greater challenges, such as demands for more political accountability. Political instability would seem the most likely outcome. Civil-military relations are likely to remain poor throughout the region, making security assistance highly problematic. Especially in Azerbaijan and Georgia, the militaries are likely to become even more politicized and viewed as threats by their own governments. The pattern of coups and coup attempts is already well established in these countries.

This leaves the United States with a difficult decision. Should it continue to aid countries with a revanchist agenda such as Georgia and Azerbaijan and be embarrassed again as it was after the 2008 Russian-Georgian war? Will Washington maintain the fiction that the training it gives does not increase the likelihood of cross-border forays, by citing its narrow counterterrorism objective?

The U.S. administration has offered a way to square the circle by advocating "brains before brawn" and promoting the increase of intellectual capacity. Assistant Secretary of Defense for International Security Affairs Alexander Vershbow testified to the Senate Foreign Relations Committee in August 2009, "Focusing U.S. assistance initially on fundamental intellectual issues like training, doctrine and personnel management . . . is our prioritized approach, and this will serve as a foundation on which Georgia can build for years to come." This seems a sensible approach in and of itself. However, there is no guarantee that writing a check for $1 billion for Georgia means the money will go somewhere other than the defense program even if it is not specifically targeted for defense. Rather, it allows Georgia, should it wish, to reallocate funds internally. The current president of Georgia is still set on "liberating" South Ossetia and Abkhazia.

For its part, Nagorno-Karabakh still drives Armenia-Azerbaijan relations. Ongoing aid to one of the parties (either direct or indirect) may increase the prospects for violence. In Azerbaijan's case, the danger of war is exacerbated as a result of infighting among factions within the government. The Armenian government also lacks legitimacy, but for now the forces advocating a negotiated end of the conflict remain in the minority.

Pushing liberal democracy in the South Caucasus brings with it the unintended consequence of increased political instability and a greater likelihood of internal and external violence. This pattern is readily observed in the region. Unfortunately, external actors promoting such reforms offer no acceptable regional solutions to the endemic internal and external security problems these countries suffer. So pushing democracy will only make matters worse.

The problem of security assistance to a region such as the South Caucasus calls out for a kind of security assistance impact statement analogous to an environmental impact statement. This is perhaps something the Government Accountability Office could do. Thus, even though something akin to the 2008 Russian-Georgian war may not be averted, at least the risks would be recognized.

And finally, we should recall the recent policy prescription by the independent fact-finding mission on the Georgian conflict: "Utmost care should be taken by providers of military aid to refrain from giving their support, even unintentionally or indirectly, to any actions or developments detrimental to the stability of the region."[43] **JFQ**

We want to thank Dr. Jim Smith and the Air Force Institute of National Security Studies for their support.

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Strategic Forum 254

U.S.-Mexico Homeland Defense: A Compatible Interface

This Forum, by General Victor E. Renuart, Jr., USAF, Commander of U.S. Northern Command (USNORTHCOM), and Dr. Biff Baker, takes issue with Strategic Forum 243 (July 2009) entitled *U.S.-Mexico Defense Relations: An Incompatible Interface*. The authors argue that the bond between the American and Mexican people has been historically strong and has grown closer over time. They cite the North American Free Trade Agreement, Mexican military help after Hurricane Katrina, and the Merida Initiative as evidence of expanding trust between the countries. They conclude that increased cooperation between Mexico and USNORTHCOM and the U.S. interagency community on the northern side of the border will improve the security and prosperity of both nations.

Strategic Forum 253

Strengthening the IAEA: How the Nuclear Watchdog Can Regain Its Bark

Ambassador Gregory L. Schulte, former U.S. Permanent Representative to the International Atomic Energy Agency (IAEA), examines the recent history of the United Nations nuclear "watchdog" agency. He describes how stalled and politicized investigations of Iran and Syria have put the agency's credibility at risk. By strengthening the agency's verification capability, the IAEA can help shape the global growth of nuclear power, ensuring safety and security while discouraging the spread of sensitive technologies. The author calls on the new Director General to remove the politics from IAEA business and return the agency to its technical mandate.

Visit the NDU Press Web site for more information on publications at ndupress.ndu.edu

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DOD's Energy Challenge as Strategic Opportunity

By AMORY B. LOVINS

Amory B. Lovins is Chairman and Chief Scientist of Rocky Mountain Institute.

Energy is the lifeblood of modern societies and a pillar of America's prowess and prosperity. Yet energy is also a major source of global instability, conflict, pollution, and risk. Many of the gravest threats to national security are intimately intertwined with energy, including oil supply interruptions, oil-funded terrorism, oil-fed conflict and instability, nuclear proliferation, domestic critical infrastructure vulnerabilities, and climate change (which changes everything).[1]

Every combatant command has significant and increasing energy-related missions. Energy has become such a "master key"—it is so pervasive in its tangled linkages to nearly every other security issue—that no national security strategy or doctrine can succeed without a broad and sharp focus on how the United States and the world get and use energy. For the first time, 37 years after the 1973 oil embargo, the 2010 Quadrennial Defense Review is expected to recognize energy's centrality to the mission of the Department of Defense (DOD), and to suggest how DOD can turn energy from a major risk into a source of breakthrough advantage.

DOD faces its own internal energy challenges. The heavy steel forces that defeated the Axis "floated to victory on a sea of oil," six-sevenths of which came from Texas. Today, Texas is a net importer of oil, and warfighting is about 16 times more energy-intensive: its oil intensity per warfighter rose 2.6 percent annually for the past 40 years and is projected to rise another 1.5 percent annually through 2017 due to greater mechanization, remote expeditionary conflict, rugged terrain, and irregular operations.[2] Fuel price volatility also buffets defense budgets: each $10 per barrel (bbl) rise in oil price costs DOD over $1.3 billion per year. But of immediate concern, DOD's mission is

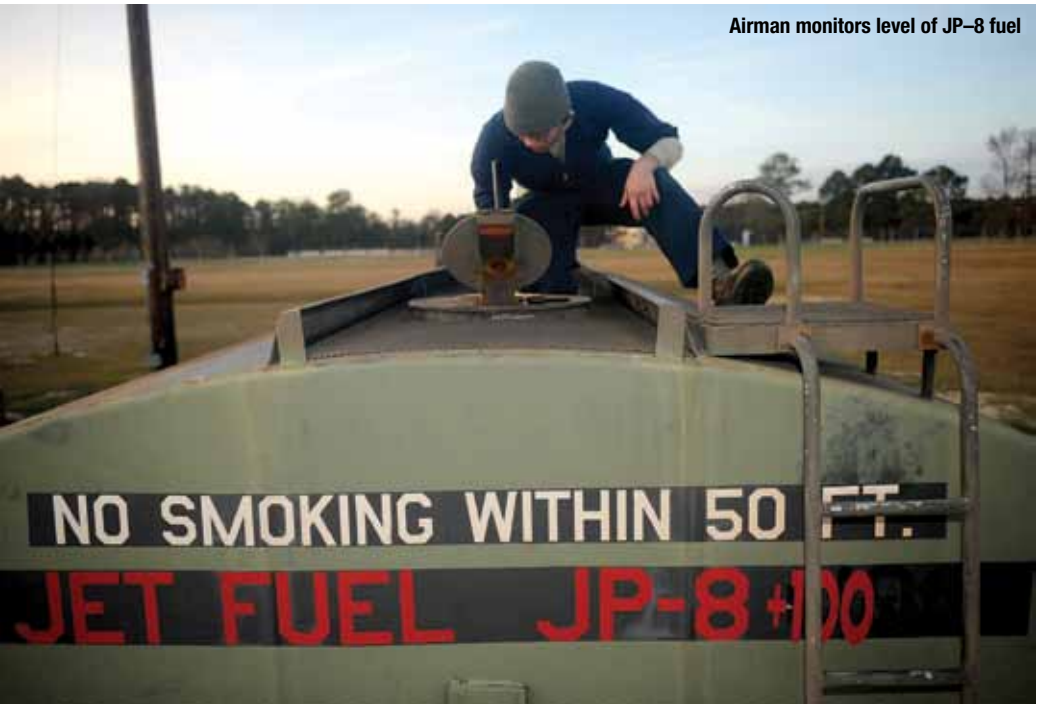
Oil field burns as Marines advance on Baghdad, Operation *Iraqi Freedom*, 2003

U.S. Marine Corps (Andrew P. Roufs)

at risk (as recent wargaming confirms), and the Department is paying a huge cost in lives, dollars, and compromised warfighting capability for two reasons:

- pervasively inefficient use of energy in the battlespace
- ~99 percent dependence of fixed-facility critical missions on the vulnerable electricity grid.

This discussion of both issues draws heavily on the Defense Science Board's (DSB's) 2008 report *More Fight—Less Fuel*.[3] That analysis, building on and reinforcing its largely overlooked 2001 predecessor, found that solutions are available to turn these handicaps into revolutionary gains in warfighting capability, at comparable or lower capital cost and at far lower operating cost, without tradeoff or compromise. The prize is great. As the Logistics Management Institute stated, "Aggressively developing and applying energy-saving technologies to military applications would potentially do more to solve the most pressing long-term challenges facing DOD and our national security than any other single investment area."[4]



Airman monitors level of JP–8 fuel

U.S. Air Force (Clara Wymbs)

Fuel Logistics: DOD's Soft Underbelly

Fuel has long been peripheral to DOD's focus ("We don't *do* fuel—we *buy* fuel"), but turbulent oil markets and geopolitics have lately led some to question the Department's long-term access to mobility fuel. Echoing the International Energy Agency's chief economist, Fatih Birol—"We must leave oil before it leaves us"—some analysts assert world oil output capability has peaked or soon will. They overlook recent evidence that "peak oil" is more clearly imminent in demand than in supply. U.S. gasoline use—an eighth of world oil—is probably in permanent decline.[5] So may be Organisation for Economic Co-operation and Development countries' oil use, which has been falling since early 2005.[6] Deutsche Bank projects world oil use to peak in 2016, then be cut by electric cars to ~40 percent below the consensus forecast or ~8 percent below current levels by 2030.[7] This assumes China's new cars will be 26 percent electrified by 2020 (China's target is 80 percent), and omits lightweight and low-drag cars, superefficient trucks and planes, and other important oil savings well under way. Oil, as predicted for two decades, is becoming uncompetitive even at low prices before it becomes unavailable even at high prices.

Nobody knows how much oil is in the ground: governments, which often do not know or will not transparently reveal what they have, hold about 94 percent of reserves. But DOD, like the United States, has three compelling reasons to get off oil regardless: security, climate, and cost. Long-term oil availability concerns for DOD are misdirected; even more so, as we will see, are proposals to create a defense synthetic fuel industry. Indeed, DOD is probably the world's largest institutional oil buyer, consuming in fiscal year (FY) 2008 120 million barrels costing $16 billion—93 percent of all U.S. Government oil use (see figure). But oil is a largely fungible commodity in a global market; the Department uses only 0.4 percent of the world's oil output (about what two good-sized Gulf of Mexico platforms produce); and in a crisis, DOD has oil-buying priority. Rather, the issue is that DOD's unnecessarily inefficient use of oil makes it move huge quantities of fuel from purchase to use, imposing high costs in blood, treasure, and combat effectiveness.

Logistics uses roughly half the Department's personnel and a third of its budget. One-fifth of DOD's oil—at least 90 million gallons each month—supports Iraq and Afghanistan operations that have increased forward bases' oil use tenfold.[8] Of the tonnage moved when the Army deploys, roughly half is fuel.[9] A typical Marine combat brigade needs more than a half-million gallons per day. *Desert Storm*'s flanking maneuver burned 70,000 tons of fuel in 5 days.[10] Delivering that quantity is a huge job for brigades of logistics personnel and for the personnel and assets needed to maintain and protect the logistics chain.

nobody knows how much oil is in the ground: governments, which often do not know or will not transparently reveal what they have, hold about 94 percent of reserves

Despite extensive land and air forces trying to guard them—a "huge burden on the combat forces"[11]—fuel convoys are attractive and vulnerable targets, making them one of the Marine Corps Commandant's most pressing casualty risks in Afghanistan.[12] In FY07, attacks on fuel convoys cost the U.S. Army 132 casualties in Iraq (.026/convoy) and 38 in Afghanistan (.034/convoy).[13] About 12 percent of *total* FY07 U.S. casualties in Iraq and 35 percent in Afghanistan were Army losses—including contractors but not other Services or coalition partners—associated with convoys.[14] Their constrained routes expose them to improvised explosive devices (IEDs), which probably caused the majority of U.S.

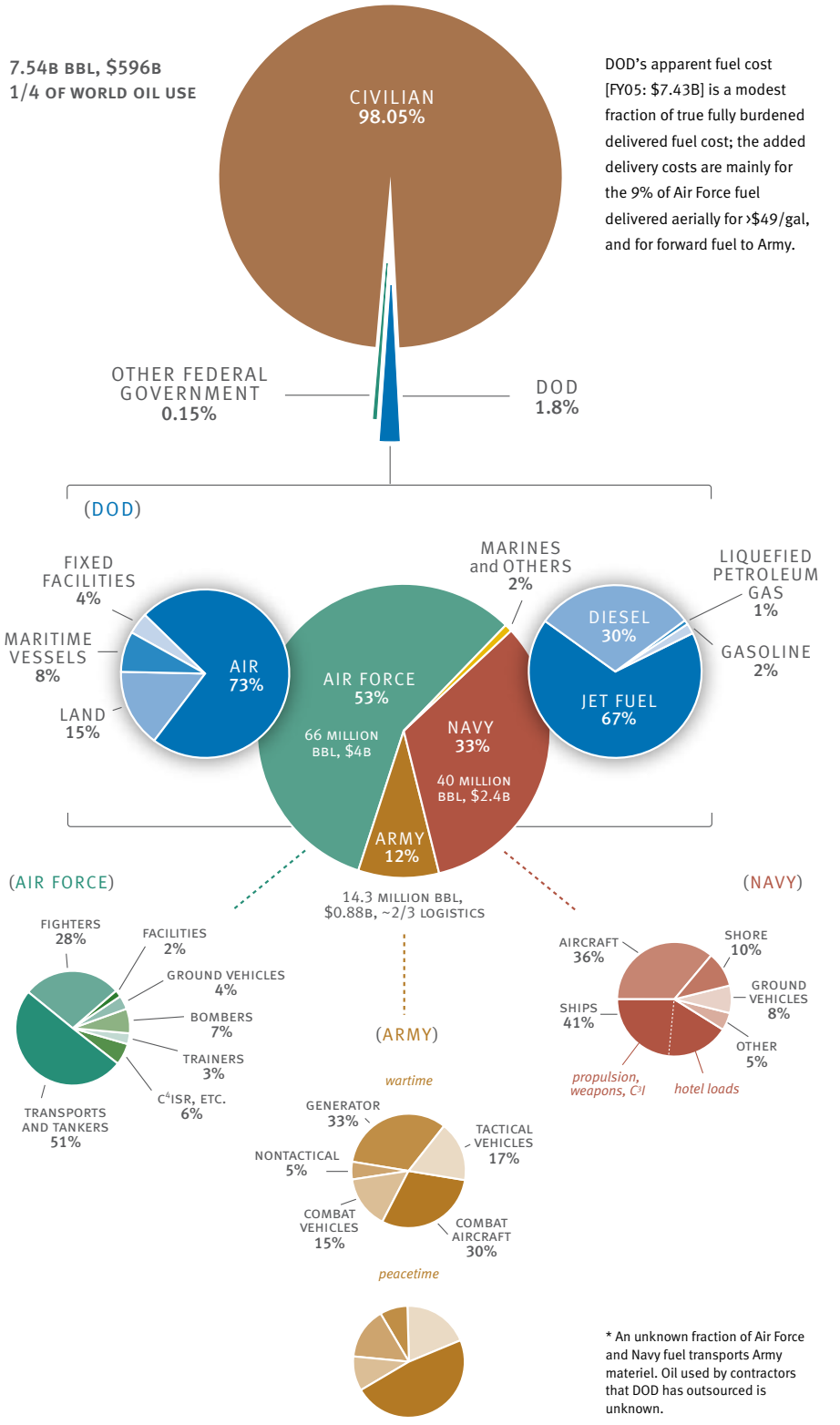
fatalities in Afghanistan in 2009. Should that conflict follow an Iraq-like profile, its casualty rates could rise 17.5 percent annually.[15] Just the dollar cost of protecting fuel convoys can be "upward of 15 times the actual purchase cost of fuel, . . . [increasing] exponentially as the delivery cost increases or when force protection is provided from air."[16]

Thus, attacks on fuel assets and other serious hazards to fuel convoys increase mission risk, while fuel logistics and protection divert combat effort and hammer oil-strained budgets. Yet the need for most of the fuel delivered at such high cost could have been avoided by far more efficient use. Efficiency lags because when requiring, designing, and acquiring the fuel-using devices, DOD has systematically assumed that fuel logistics is free and invulnerable—so much so that wargames did not and often could not model it. Instead of analyzing fuel logistics' burden on effectiveness and signaling it by price, DOD valued fuel at its wholesale price delivered in bulk to a secure major base (around $1–$3 per gallon), rather than at its fully burdened cost delivered to the platform in theater in wartime (usually tens and sometimes hundreds of dollars per gallon). Lacking requirements, instructions, shadow prices, rationales, or rewards for saving fuel, hardly anyone considered the military value of achieving, nor strove to achieve, high fuel efficiency.

As consequences became obvious in theater and began to emerge in wargames, the Department in 2007 started changing its policy to value energy savings at the "Fully Burdened Cost of Fuel" (FBCF, in dollars per gallon), including force protection, *delivered* to its end-user in theater. The 2009 National Defense Authorization Act (NDAA) codified both FBCF and new energy Key Performance Parameters (KPPs, in gallons per day or mission). Those are to receive similar weight to traditional KPPs like lethality, protection, and reliability that encapsulate the Department's pursuit of capability. In principle, both FBCF and energy KPPs will guide requirements writing, analyses of alternatives, choices in the acquisition tradespace, and the focus of DOD's science and technology (S&T) investments. In practice, energy KPPs have not yet been applied (their "selective use" is allowed but not yet launched), and much work must be organized and resourced to get the FBCF numbers right and apply them systematically.[17]

The FBCFs initially in use are incomplete. Current guidance still appears to omit support pyramids, multipliers to rotational force strength, actual (not book) depreciation lives, full headcounts including borrowed and perhaps contractor personnel, theft and attrition adjustments,[18] and uncounted Air Force and Navy lift costs to and from theater. All should be included: FBCF should count all assets and activities—at their end-to-end,

Approximate Liquid Petroleum Fuel Use by DOD in FY05



lifecycle, fully burdened total cost of ownership—that will no longer be needed, or can be realigned, if a given gallon need no longer be delivered. Thus, if fielded fuel supply needs shrink, so do its garrison costs for related training and maintenance. Conversely, garrison costs should be additive to FBCF, not dilutive: some analysts average peacetime with wartime costs to water down FBCF, or even assume a peacetime operating tempo, but as the 2008 task force stated, "FBCF is a wartime capability planning factor, not a peacetime cost estimate."[19]

Even before these conservatisms are made realistic, initial FBCF estimates value saved fuel often *one to two orders of magnitude* higher than previously. If these new metrics gain momentum and top-level focus, they could drive strategic shifts and innovations that could revolutionize military capability and effectiveness.

More Fight—Less Fuel mapped a detailed military energy reform agenda, broadly backed by DOD's 2008 Energy Security Task Force. DSB offered specific solutions for its key findings: that DOD lacks the strategy, policies, metrics, information, and governance structure to properly manage its energy risks; that technologies are available to make DOD systems more energy-efficient, but they are undervalued, slowing implementation and resulting in inadequate S&T investments; and that there are many opportunities to reduce energy demand by changing wasteful operational practices and procedures.

if fielded fuel supply needs shrink, so do its garrison costs for related training and maintenance

Marine uses metal detector to search for improvised explosive devices in Helmand Province, Afghanistan

U.S. Marine Corps (Artur Shvartsberg)

The 2009 NDAA codified reforms on the lines recommended by DSB, to be led by a new DOD Director of Operational Energy. As of December 1, 2009, that critical post remained vacant, but some encouraging Service adoption initiatives had begun, such as the *Army Energy Security Implementation Strategy* and Navy Secretary Ray Mabus's invigorating energy goals. But the DSB task force, not stopping with bureaucratic fixes, had added the even more incisive finding that "DOD's energy problems [are] sufficiently critical to add two new strategic vectors"—an older term for "succinct descriptions of capabilities that would make a big difference in military operations"[20]—to complement the four historic ones: "speed, stealth, precision, and networking."

In today's more familiar language, Endurance and Resilience are new capabilities that drive *and* apply new operational requirements. An Endurance capability will create transformational strategies and tactics that both tell the requirements writer to make a new platform fuel-efficient *and* inspire the force planner to exploit its increased range and agility. Today's DOD habits would instead tend to make it heavier with the same range—much as Detroit's engine improvements since the 1970s, rather than saving one-third of civilian cars' fuel, only made them more muscular. The need to change entrenched habits in force planning and operational requirements makes big new capabilities both vital and hard. Driving them deeply into doctrine, strategy, organizational structures, cultures, training, reward systems, and behaviors requires strong, consistent, persistent senior leadership. But once so embedded, new capabilities disruptively and profoundly improve military effectiveness and cost-effectiveness.

The Endurance Capability

Endurance traditionally means "ability to sustain operations for an extended time without support or replenishment."[21] The DSB task force elaborated: "Endurance exploits improved energy efficiency and autonomous energy supply to extend range and dwell—recognizing the need for affordable dominance, requiring little or no fuel logistics, in persistent, dispersed, and remote operations, while enhancing overmatch in more traditional operations."[22]

A lean or zero fuel logistics tail also increases mobility, maneuver, tactical and operational flexibility, versatility, and reli-

ability—all required to combat asymmetrical, adaptive, demassed, elusive, faraway adversaries. Endurance is needed in every "platform" using energy in the battlespace, from mobility platforms to expeditionary base power to battery-powered land-warrior electronics. Endurance is even more valuable in stability operations, which often need even more persistence, dispersion, and affordability than the combat operations with which they now enjoy comparable priority.[23]

The DSB report found "enormous technical potential to cost effectively become more fuel efficient and by so doing to significantly enhance operational effectiveness."[24] Current, near-term, and emerging efficiency technologies offer major fuel savings in land, sea, and air platforms,[25] with better warfighting capability (not one of 143 briefs disclosed a trade-off), and with generally excellent economics and operational characteristics.

Early adoption has begun at a modest scale. For example, field commanders in Iraq noticed that:

Fuel that is transported at great risk, great cost in lives and money, and substantial diversion of combat assets for convoy protection, is burned in generator sets to produce electricity that is, in turn, used to air condition un-insulated and even unoccupied tents. . . . One recently analyzed FOB [forward operating base] *used about 95% of its genset* [engine-generator set] *electricity for this purpose, and about one-third of the Army's total wartime fuel use is for running gensets.*[26]

A single typical 60-kilowatt genset burns 4 to 5 gallons per hour, or $0.7 million per year at a typical Afghanistan FBCF of $17.44/gal. Fueling one FOB's gensets might cost $34 million per year—plus, at the FY07 casualty rate, nearly one casualty.[27]

In response, DOD is spraying over 17 million square feet of insulating foam onto temporary structures in theater, saving over half their air-conditioning energy. This $146 million investment should repay its cost in 67 to 74 days at the estimated Iraq $13.80 per gallon FBCF—10 times faster than under the old assumption of undelivered and unprotected fuel. The first $22 million worth should save more than $65 million each year—and more than one convoy casualty.[28] Next steps include far more efficient gensets and air conditioners, encompassing emerging concepts for cooling without electricity.

Lieutenant General James Mattis's 2003 challenge to "unleash us from the tether of fuel" and Major General Richard Zilmer's 2006 operational request from Anbar Province for a "self-sustainable energy solution" stimulated the Army's Rapid Equipping Force to develop a portable renewable/hybrid energy supply system, demonstrated at the National Training Center but not yet fielded. In theater, at the fully burdened cost of fuel, it would probably have been paid back in months[29]—faster if credited for avoided casualties and enhanced combat capability. The Marines have pledged resources for such work.

current, near-term, and emerging efficiency technologies offer major fuel savings in land, sea, and air platforms

Over several decades, concerted adoption of identified energy efficiency technologies holds the estimated potential to cut total DOD mobility-fuel requirements by about two-thirds, perhaps even three-fourths. The fattest targets vary according to intent:

- The most gallons can be saved in aircraft, which use 73 percent of DOD fuel. Saving 35 percent of aircraft fuel would free up as much fuel as all DOD land and maritime vehicles plus facilities use. New heavy fixed-wing platforms can save at least 50 percent and new rotary-wing platforms 80 percent, since those fleets use designs that are, respectively, 50 to 60 and 30 to 50 years old.
- The biggest gains in combat effectiveness will come from fuel-efficient ground forces (land and vertical-lift platforms, land warriors, FOBs). For example, Soldiers carry an average of 2 kilograms of batteries per mission-day.
- Savings downstream in a long logistics chain save more fuel: delivering 1 gallon to the Army speartip consumes about 1.4 extra gallons in logistics.
- Savings in aerially refueled aircraft and forward-deployed ground forces save the most delivery cost and thus realignable support assets.

Reset, such as the tens of billions of dollars slated for Humvee replacement, offers a ripe opportunity for leap-ahead performance if, for example, a breakthrough light tactical vehicle already substantially developed can get the "intensive development, design and competitive prototyping" recommended by the 2008 DSB task force. A vehicle as protective and lethal as a 23- to 29-ton mine resistant ambush protected (MRAP) vehicle, but with acceleration, agility, and stability similar to a top-of-the-line pickup truck—and fuel economy, weight, and cost better than a 5- to 6-ton up-armored Humvee—sounds more promising than a Humvee or MRAP. Yet the innovative competitor's prototyping remains stalled, and Office of the Secretary of Defense policy bars using reset funds for innovative platforms.

Both DSB task forces recommended changes in DOD doctrine, structure, business processes, and other activities—emphasizing design and acquisition—to capture these opportunities aggressively and exploit five major military energy efficiency benefits:

- *Force protector*, with far fewer vulnerable fuel convoys.
- *Force multiplier*, freeing up convoy guards for combat tasks—turning fuel-guarders into trigger-pullers.
- *Force enabler*, equipping warfighters with the greatly enhanced dwell, reach, agility, and flexibility that can affordably dominate in both dispersed and focused combat.
- *Key to transformational realignment* from tail to tooth—shifts totaling multi-divisional size, worth many tens of billions of dollars per year.
- *Catalyst for leap-ahead fuel savings in the civilian sector*, which uses more than 50 times as much fuel as DOD. Valuing saved military fuel at FBCF will drive astonishing innovations that accelerate civilian vehicle efficiency, much as past military S&T investment yielded the Internet, Global Positioning System, and jet engine and microchip industries.

DSB's 2008 report summarized: "Unnecessarily high and growing battlespace fuel demand compromises operational capability and mission success; requires an excessive support force structure at the expense of operational forces; creates more risk for support operations than necessary; and increases life-cycle operations and support costs."[30] Yet radically boosting platforms' energy efficiency and combat effectiveness at reasonable or reduced up-front cost can

turn each of these energy risks into major warfighting gains. Requiring and exploiting Endurance can give DOD more effective forces *and* a more stable world, at reduced cost and risk. This better-than-free opportunity must become a cornerstone of military doctrine.

This shift will not be easy. It requires fundamentally redesigning military energy flows to support fast-changing strategic, operational, and tactical requirements. It demands new DOD planning processes that recognize Endurance's operational value so it becomes a requirement in platforms now in development, and appreciate that delivering an operational effect within a fixed energy budget is itself an important capability. A new system's energy budget is an important requirement—as important as any other—and should be analytically based on the size of the logistics tail the system demands and the burden that assuring successful delivery of that logistics tail imposes on the force. Severalfold greater platform fuel efficiency comes from rapidly adopting and fielding advances in ultra-light and ultra-strong materials, fluid dynamics, actuators, and propulsion, all synergistic with alternative fuel and power supplies. It also depends on transformational approaches, incentivized by FBCF and potentially required by energy KPPs but unfamiliar to most DOD contractors, that use integrative design to achieve expanding, not diminishing, returns to investments in energy efficiency—yielding major energy savings at *lower* capital cost without trading off nonenergy KPPs. Basic innovation in design and acquisition requires taking intelligent risks and rewarding those who do so. All this will require senior leadership to tackle head-on the issue that a previous DSB report described thus: "Often the very technology that can provide the United States with a disruptive advantage is itself disruptive to DOD's culture . . . and antibodies rapidly and reflexively form to reject it."[31] Yet such disruptive concepts can be so clearly beneficial that masterful and resolute leadership breaks through hesitancy and resistance. This is the Department's imperative today.

Airman fuels F–15E for sortie

U.S. Air Force (Rae Perry)

radically boosting platforms' energy efficiency and combat effectiveness at reasonable or reduced up-front cost can turn each of these energy risks into major warfighting gains

Fuel and Power Autonomy. Very efficient energy use stretches fuel and power made in theater from wastes, opportunistically acquired feedstocks, or renewable energy flows. Fedex and Virgin Airways plan to fuel 30 percent and 100 percent of their respective fleets with biofuels by 2020. Domestically produced biofuels from centralized, specialized plants do little for DOD's expeditionary needs, but much cutting-edge research emphasizes portable biofuel converters akin to an "opportunistic foraging herbivore."[32] The 2008 DSB task force favored promising expeditionary biofuel and synfuel technologies, and the Services are examining some.

In contrast, the DSB task force expressed "strong concerns" about the coal-to-liquids synfuels favored by the Air Force and Navy (but illegally carbon-intensive under a 2007 law), finding they "do not contribute to [solving] DOD's most critical fuel problem—delivering fuel to deployed forces," "do not appear to have a viable

market future or contribute to reducing battlespace fuel demand," and do not appear to address a real problem. Fuel interdiction risk in theater is best countered by efficient use, diversified fuels and supply chains, and greater or more secure local stockpiling. If the concern is long-term fuel availability, military and civilian end-use efficiency is by far the cheapest choice. In 2005, Wal-Mart's giant Class 8 truck fleet launched gallon per ton-mile savings that reached 38 percent in 2008 and are targeted to reach 50 percent in 2015. General U.S. adoption of those doubled-efficiency civilian trucks will save 6 percent of U.S. oil—triple DOD's total use. The Secretary of Defense's JASON science advisors, whose energy report also pointedly failed to endorse coal-to-liquids, suggested saving oil by redesigning the Postal Service's delivery fleet.[33]

Nuclear power is sometimes suggested for land installations or even expeditionary forces,[34] typically without discussing cost (grossly uncompetitive), modern renewables (typically much cheaper), operational reliability (usually needing 100 percent backup), or security. For these and other reasons, the 2008 DSB and JASON task forces did not endorse this option. After vast investment in hardware and a unique technical culture, nuclear propulsion has proven its merit in submarines and aircraft carriers. In 2006–2009, congressional enthusiasts announced supposed Naval Sea Systems Command (NAVSEA) findings that nuclear propulsion in new medium surface combatants could beat $70/bbl oil. However, the 2008 DSB task force discovered that NAVSEA's actual finding ($75–$225/bbl) had improperly assumed a zero real discount rate. A 3 percent annual real discount rate yielded a $132–$345/bbl breakeven oil price; NAVSEA did not respond to requests to test the 7 percent annual real discount rate that the Office of Management and Budget probably mandates. Presumably, the Secretary of Defense will reject this option and focus resources on making ships optimally efficient.

studies are redirecting military energy conversation from exotic, speculative, and often inappropriate supplies to efficient use

The 2008 DSB and JASON studies are redirecting military energy conversation from exotic, speculative, and often inappropriate supplies to efficient use, which makes autonomous in-theater supply important and often cost-effective. But all such choices depend on a further fundamental reform in DOD's metrics and procedures.

Gross versus Net Capability. A change that would boost operational capability by greatly increasing tooth-to-tail ratios was identified in a little-noticed but "important observation of the [2008 DSB] Task Force":

[W]*hat* [the Joint Capabilities Integration Development System][35] *currently calls "capability" is actually the theoretical performance of a platform or system unconstrained by the logistics tail required for its operation. But tail takes money, people, and materiel that detract from tooth. True net capability, constrained by sustainment, is thus the gross capability (performance) of a platform or system times its "effectiveness factor"—its ratio of effect to effort:*

Combat Tactical Vehicle under development is tested at Nevada Automotive Test Center

U.S. Navy (John F. Williams)

Effectiveness Factor = Tooth / (Tooth + Tail)

Also, in an actual budget, Tooth = (Resources – Tail), so

Effectiveness Factor = (Resources – Tail) / Resources.

Effectiveness factor ranges from zero (with infinite tail) to one (with zero tail). If tail > 0, true net capability is always less than theoretical (tail-less) performance, but DOD consistently confuses these two metrics, and so misallocates resources. Buying more tooth that comes with more (but invisible) tail may achieve little, no, or negative net gain in true capability. While the Department recognizes the need to reduce tail, the analytical tools needed to inform decisions on how to do so are not in place. Focusing on reducing tail can create revolutionary capability gains and free up support personnel, equipment, and budget for realignment. The task force recommendations are intended to build the analytical and policy foundation to begin introducing this way of thinking into the requirements, acquisition and budget forecasting processes.[36]

To summarize, current force planning does not and cannot predict or compare competing options' needed tail size or their net capability, so after decades, the "tail is eating the tooth." Reversing this impairment needs five missing steps: (1) an Endurance capability to drive and exploit operational requirements for radical efficiency, (2) enforced by energy KPPs, (3) valued at FBCF, (4) competed on *net* capability, and (5) tested with wargaming and campaign-modeling tools revised so they "play fuel" and reveal the full operational value of lean fuel logistics. All five together will help drive DOD toward ultimately breeding, where possible, a Manx force—one with no tail. Efficient and passively or renewably cooled tents in the desert can mean no gensets, no fuel convoys, no problem. Such a thrust toward efficiency in every use of fuel and electricity also strongly supports the second proposed new key capability—Resilience.

The Resilience Capability

Resilience "combines efficient energy use with more diverse, dispersed, renewable supply—turning the loss of critical missions from energy supply failures (by accident or malice) from inevitable to near-impossible."[37] This capability is vital because the:

[a]*lmost complete dependence of military installations on a fragile and vulnerable commercial power grid and other critical national infrastructure places critical military and Homeland defense missions at an unacceptably high risk of extended disruption. . . .* [Backup generators and their fuel supplies at military installations are generally sized] *for only short-term commercial outages and seldom properly prioritized to critical loads because those are often not wired separately from non-essential loads. DOD's approach to providing power to installations is based on assumptions that commercial power is highly reliable, subject to infrequent and short term outages, and backups can meet demands.* [These assumptions are] *. . . no longer valid and DOD must take a more rigorous risk-based approach to assuring adequate power to its critical missions.*[38]

the U.S. electric grid can be interrupted by a lightning bolt, rifle bullet, malicious computer program, untrimmed branch, or errant squirrel

The 2008 DSB Task Force found that the confluence of many risks to electric supply—grid overloads, natural disasters, sabotage or terrorism via physical or cyberattacks on the electric grid, and many kinds of interruptions to generating plants—hazards electricity-dependent hydrocarbon delivery, the national economy, social stability, and DOD's mission continuity.

The U.S. electric grid was named by the National Academy of Engineering as the top engineering achievement of the 20th century. It is very capital-intensive, complex, technologically unforgiving, usually reliable, but inherently brittle. It is responsible for ~98–99 percent of U.S. power failures, and occasionally blacking out large areas within seconds—because the grid requires exact synchrony across subcontinental areas and relies on components taking years to build in just a few factories or one (often abroad), and can be interrupted by a lightning bolt, rifle bullet, malicious computer program, untrimmed branch, or errant squirrel. Grid vulnerabilities are serious, inherent, and not amenable to quick fixes; current Federal investments in the "smart grid" do not even require simple mitigations. Indeed, the policy reflex to add more and bigger power plants and power lines after each regional blackout may make the next blackout more likely and severe, much as suppressing forest fires can accumulate fuel loadings that turn the next unsuppressed fire into an uncontrollable conflagration.

Power-system vulnerabilities are even worse in-theater, where infrastructure and the capacity to repair it are often marginal: "attacks on the grid are one of the most common and effective tactics of insurgents in Iraq, and are increasingly seen in Afghanistan."[39] Thus *electric*, not oil, vulnerabilities now hazard national and theater energy security. Simple exploitation of domestic electric vulnerabilities could take down DOD's basic operating ability and the whole economy, while oil supply is only a gathering storm.

The DSB Task Force took electrical threats so seriously that it advised DOD—following prior but unimplemented DOD policy[40]—to replace grid reliance, for critical missions at U.S. bases, with onsite (preferably renewable) power supplies in netted, islandable[41] microgrids. The Department of Energy's Pacific Northwest National Laboratory found ~90 percent of those bases could actually meet those critical power needs from onsite or nearby and mainly renewable sources, and often more cheaply. This could achieve zero daily net energy need for facilities, operations, and ground vehicles; full independence in hunker-down mode (no grid); and increased ability to help serve surrounding communities and nucleate blackstart of the failed commercial grid.

Implementing these sensible policies merits high priority: probably only DOD can move as decisively as the threat to national security warrants. And as with the Endurance capability, exploiting Resilience—building on DOD's position as the world's leading direct-or-indirect buyer of renewable energy—would provide leadership, market expansion, delivery refinement, and training that would accelerate civilian adoption. Already, the 2008 NDAA requires DOD to establish a goal to make or buy at least 25 percent of its electricity from renewables by 2020, and study solar and windpower feasibility for expeditionary forces. Under 2007 Executive Order 13423's Government-wide mandate, DOD must also reduce energy intensity by FY15 to 30 percent below FY03. The Resilience capability would focus all these efforts on robust architectures and implementation paths, ensuring that bases' onsite renewables deliver reliable power to

critical loads whether or not the commercial grid is working—a goal not achieved by today's focus on compliance with renewables quotas.

Resilience is even more vital and valuable abroad, in fixed installations and especially in FOBs (whose expeditionary character emphasizes the Endurance logic of Fully Burdened Cost of Electricity). Foreign grids are often less reliable and secure than U.S. grids; protection and social stability may be worse; logistics are riskier and costlier in more remote and austere sites; and civilian populations may be more helped and influenced. Field commanders strongly correlate reliable electricity supplies with political stability. In Sadr City, Army Reserve Major General Jeffrey Talley's Task Force Gold proved in 2008–2009 that *making* electricity reliable, and thus underpinning systematic infrastructure-building, is an effective cornerstone of counterinsurgency.

Reconstruction in Iraq and Afghanistan is starting to define and capture this opportunity to build civic cohesion and dampen insurgency, while reducing attacks' disruption and attractiveness. A resilient, distributed electrical architecture can bring important economic and social side-benefits, as with Afghan microhydropower programs for rural development. Cuba lately showed, too, that aggressively integrating end-use efficiency with micropower can cut national blackouts—caused by decrepit infrastructure, not attacks—by one to two orders of magnitude in a year.

At home, DOD efficiency and micropower echo new domestic energy policy and startling developments in the marketplace. In 2006, micropower[42] delivered one-sixth of the world's electricity, one-third of its new electricity, and 16 to 52 percent of all electricity in a dozen industrialized countries (the United States lagged with 7 percent). In 2008, for the first time in about a century, the world invested more in renewable than in fossil-fueled power supplies; renewables (excluding big hydroelectric dams) added 40 billion watts of global capacity and got $100 billion of private investment. Their competitive and falling costs, short lead times, and low financial risks attract private capital. Shifting to these more resilient energy solutions goes with the market's flow.

Expanding DOD's Energy Voice

Endurance and Resilience offer synergistic national security benefits far beyond those internal to the Department's mission effectiveness. As a dozen retired flag officers concluded, "We can say, with certainty, that we need not exchange benefits in one dimension for harm in another; in fact, we have found that the best approaches to energy, climate change, and national security may be one and the same."[43] Moreover, whether we care most about national security, climate change, or jobs and competitiveness, we should do exactly the same things about energy. Thus, focusing on our energy actions'

whether we care most about national security, climate change, or jobs and competitiveness, we should do exactly the same things about energy

Soldier guards newly constructed electrical facility in Baghdad

U.S. Army (James Selesnick)

attributes and outcomes, not motives, could build broad consensus.

The resulting benefits could be enlarged by bringing DOD's perspective and expertise more vigorously into national energy policymaking. A common critique holds that past Federal energy policy has constituted the most comprehensive threat to national energy security by:

- perpetuating America's expanding oil dependence
- strongly favoring overcentralized energy system architectures inherently vulnerable to disruption
- creating attractive new terrorist targets
- aiming to increase and prolong reliance on the most vulnerable domestic infrastructure
- promoting technologies that encourage proliferation.

Now that national energy policy is shifting—often for additional reasons such as economic recovery, competitive advantage, and climate protection—DOD's knowledge of energy-related security risks needs to inform the councils of government more systematically. If past national security outcomes are not what DOD wants, it is the duty of military professionals to say so. Their guidance, and increasingly their achievements, can help the Department of Defense build a stronger America and a richer, fairer, cooler, and safer world.

The United States can and must make oil obsolete as a strategic commodity—just as refrigeration did to salt (once so vital a preservative that countries fought over salt mines)[44]—and electric power a boon unshadowed by threat. DOD's leadership in adopting and exploiting the two new capabilities proposed here would dramatically speed that journey toward a world beyond oil—with "negamissions" in the Persian Gulf, Mission Unnecessary—and indeed beyond all energy vulnerabilities. Fighting for Endurance and Resilience in Pentagon decisions today can eliminate the need to fight for oil on the battlefield tomorrow. **JFQ**

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[17] Andrew Bochman, "Measure, Manage, Win: The Case for Operational Energy Metrics," *Joint Force Quarterly* 55 (4th Quarter 2009), 113–119.

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[35] *Manual for the Operation of the Joint Capabilities Integration and Development System*, July 31, 2009, available at <https://acc.dau.mil/CommunityBrowser.aspx?id=267116&lang=en-US>.

[36] DSB, "*More Fight—Less Fuel*," 28–29.

[37] As of FY97, Defense Science Board Summer 1998 Study Task Force, *DOD Logistics Transformation*, Annotated Briefing Slides, slide 7, which also shows that "Active duty combat forces [were then] half [the] size of active logistics forces." One estimate of DOD's FY09 logistics and sustainment cost is $270 billion—over half the base budget (35).

[38] Ibid., 3 and 53.

[39] DSB, "*More Fight—Less Fuel*," 55.

[40] Ibid., 59–60; DOD Instruction 1470.11 §5.2.3.

[41] *Islandable* describes onsite supplies that can continuously serve the base and neighboring communities whether or not the commercial grid is operating.

[42] Defined here as cogeneration plus renewables minus big (>10 megawatt electrical) hydro. RMI maintains a global database.

[43] Center for Naval Analyses Military Advisory Board, *Powering America's Defense: Energy and the Risks to National Security*, May 2009.

[44] R. James Woolsey and Anne Korin, "Turning Oil into Salt," *National Review*, September 25, 2007.

BATTLEFIELD RENEWABLE ENERGY
A Key Joint Force Enabler

U.S. Air Force (Francisco V. Govea II)

By ROY H. ADAMS III, MARTIN F. LINDSEY, *and* ANTHONY MARRO

During joint operations or theater campaigns, any joint force commander (JFC), from joint task force to combatant commander, must deal with the enormous amount of energy the combined force needs for subsistence and operations. This situation becomes a limiting factor during all planning and execution across the Joint Operations Concept (JOpsC). To address this problem, many academic and governmental studies and programs focus on the research, development, testing, and procurement of renewable energy sources for the Department of Defense (DOD). However, there have been relatively few studies on the employment of renewable energy throughout the joint environment, especially outside of conventional combat operations.

For the scope of this article, *renewable energy technology* refers to already existing technological solutions that provide the joint force ready solutions to emerging problems and opportunities related to traditional energy consumption. Specifically, *battlefield renewable energy* (BRE) describes systems that generate electrical power through a variety of renewable means—most commonly solar, wind, and biomass conversion. Additionally, these systems must be deployable and sustainable throughout the range of military operations. The application of BRE throughout the JOpsC enables the JFC to decrease reliance on petroleum-based energy logistics and to build usable and sustainable host nation energy capacity.

Current Policies and Directives

U.S. public law, executive policies, and department directives govern the exploration and use of renewable energies. Specifically, two major types of documents provide the policy basis for the joint force to use renewable energy sources as key joint enablers. A series of Presidential orders, culminating with Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," directed departments to decrease fossil fuel consumption by 3 percent per year, or 30 percent by 2015 at Federal facilities.[1] While President George W. Bush exempted military operations in this policy, current battlefield trends demonstrate that a reduction of fossil fuel usage directly correlates to mission success.[2] The second series of documents, DOD directives, require Defense facilities, in various capacities, to reduce the use of fossil fuels while maximizing energy conservation and the use of renewable sources to reduce the overall cost of energy consumption throughout DOD. As a study of all these policies pointed out in 2007, there is a disconnect between consumption practices and strategic to operational goals related to the security environment.

Issues and Opportunities

In 2006, the commanding general of Multi-National Force–West (MNF–W) in Iraq described an urgent need to reduce reliance on traditional energy sources to power combat outpost and bases:

More than ever our operating forces rely on the use [of] *electrical power to support critical command and control functions; intelligence, surveillance, and reconnaissance*

Above: Air Force logistics convoy patrol team rolls out at Forward Operating Base Frontenac, Afghanistan

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assets; and life support services. To improve the security posture of the Al-Anbar Province of Iraq, MNF–W requires a renewable and self-sustainable energy solution to support forward operating bases, combat outposts throughout MNF–W's battlespace.[3]

Through analysis, MNF–W determined that most casualties occurred during the movement and delivery of fuel to the various combat outposts and bases throughout the division's area of operations. This Joint Urgent Operational Need (JUON) asked for a technological solution to power generation in order to reduce the amount of fossil fuel needed at these outposts. MNF–W concluded that if sources of renewable energy production decreased the need for traditional power generation, then fewer convoys would have to drive on long delivery routes, thus reducing the number of attacks and casualties. Additionally, MNF–W argued that the "addition of renewable and self-sustainable energy at the outlying bases will enable the Iraqis to operate independently, lessening the need for Coalition Forces to provide future logistics support."[4] As a result of this JUON, DOD began to increase research and development of BRE technologies for the joint force with the ultimate goal to reduce the need for fossil fuel delivery throughout an area of operations. However, renewable energy need not be limited to a force protection application. This issue creates an opportunity for the JFC to turn this force protection measure into a usable and sustainable source of energy to improve stability in the local security environment.

U.S. Navy (John F. Williams)

Backpack that generates power while wearer is walking or running is displayed at military expo

Toward this end, the 2008 Joint Operating Environment illuminates several "trends that influence the World's security." Among these trends, demographics, energy, globalization, food production, and water scarcity destabilize impoverished regions of the world.[5] One of the most interlinked of these trends, the production and distribution of energy, affects the developing world far more dramatically than the developed world. In fact, the Solar Electric Light Fund (SELF) defines *energy poverty* as "a lack of access to clean and efficient energy systems."[6] Energy poverty increases disease in populations and limits economic growth throughout most of the developing world, driving instability and human disaster.

if renewable energy decreased the need for traditional power generation, fewer convoys would have to drive on long delivery routes, thus reducing attacks and casualties

The African continent dramatically exemplifies the cause and effect of energy poverty. Africa remains largely devoid of electrical power, yet it produces a significant amount of the world's energy supply. Nigeria, in fact, ranks 12th among nations in world petroleum production,[7] yet lacks the capacity to deliver power to much of its rural population. The majority of its 150 million people remain impoverished and without the means to improve the human condition. In 2001, the U.S. Agency for International Development (USAID) and Department of Energy (DOE), in partnership with the Nigerian Jigawa state government and SELF, demonstrated that sustainable renewable energy provides a solution toward bringing rural Nigeria out of energy poverty. In an unstable environment, renewable energy allowed thousands of Nigerians to improve their living conditions. These projects improved food production, water and electricity generation and distribution, health care, child learning, and microeconomies within Jigawa state. These projects remain locally sustainable with little assistance needed from even the Nigerian government. Clearly, these types of renewable energy applications provide an opportunity for the joint force to partner with other nations' militaries throughout the JOpsC to reduce reliance on traditional energy solutions, while providing sustainable capacity to host nations. To grasp the extent to which BRE applications should support the JOpsC, one first needs a basic understanding of the current state of BRE and the energy requirements of the fielded joint force.

BRE Technologies

In the early 2000s, the Service components began to recognize the value of renewable energy for deployed, off-grid operations (that is, BRE). The first notable joint force application, the aforementioned MNF–W JUON, demonstrated the maturity of particular BRE technologies for forward operating base electrical power generation. Renewable energy technologies such as solar-photovoltaic (PV), wind, and biomass energy conversion can be designed for efficient packaging and are scalable to meet the power generation requirements of remote operating bases of all sizes. However, their inherent advantage over conventional petroleum-fueled systems is that, combined with demand reduction, they greatly reduce and even eliminate the need to provide fuel logistics to remote sites, saving manpower, funds, and most importantly, decreasing the risk to forces delivering supplies over contested lines of communication.

In addition, solar-PV and wind technologies offer significant inherent security features in that they are quiet and have low thermal signatures. Finally, while upfront capital costs are currently higher with renewable technologies, lifecycle costs are already substantially lower than fossil fuel technologies, especially when the fully burdened cost of fuel is included.

Often overlooked outside of the logistics community, it is vitally important to understand the magnitude and character of deployed force power requirements, as well as how particular renewable energy technologies work and their developmental maturity. This is a critical factor for the JFC who seeks to maximize the advantages and synergy achieved with BRE applications on both the battlefield and in the conduct of shaping, stability, and reconstruction operations.

To frame the challenge of powering our forces "off-the-grid," consider the power requirements for both the individual dismounted warrior and our typical forward deployed units. The load carried by a dismounted warfighter ranges from 65 to 95 pounds, with almost half of the weight dedicated to portable power devices and batteries, and recent experience shows "a brigade will consume as much as seven tons of batteries in a 72-hour mission at a cost of $700,000."[8] Maximizing the specific energy, or energy per unit mass, as well as the contribution of renewable energy storage devices is vital to reducing the logistics of supporting portable power devices. At the deployed base level, the fully burdened cost of fuel seriously challenges JFC force protection and logistics functions. As an example, deploying an Army mechanized or airborne division requires approximately 2,300 or 895 diesel generator sets, respectively, which often operate and thus consume fuel 24 hours per day, every day. Interestingly enough, 68 percent of these generators produce 5 kilowatts (kW) or less, which is easily within the demonstrated capability of deployable solar-PV systems.[9] As a second example, power generation systems are the top airlift requirement and make up 16 percent of the total mass (4 million–7 million pounds) of an Air Force Harvest Falcon deployable base, which supports 1 to 3 flying squadrons and 1,100 to 3,300 personnel.[10] The workhorse of this deployed base power generation is the MEP–12, 750kW diesel generator. Each weighs 12.5 tons, takes up the same volume as a tractor-trailer, and costs $165,000 (2005 dollars). It also possesses low fuel efficiency, is noisy, pollutes, and produces an easily targeted heat signature.[11]

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Today's state of the art in BRE is anchored in solar-PV technologies, and to a lesser degree in hybrid solar-wind power generation. Solar-PV works by directly converting the sun's light rays into an electric current through the use of semiconducting materials. Until recently, rigid and relatively fragile materials such as silicon were the only choice, making it more challenging to design efficient packaging and combat hardened systems. Now, thin film PV technologies are available that are both flexible and mechanically robust, making them easily integrated into deployable structures such as tents. Flexfilm arrays weigh 90 percent less and are more damage tolerant than conventional glass. In addition, they can be treated with an antiglare coating to reduce reflection from 1 percent to less than 0.1 percent. The primary benefits

Ohio Air National Guard solar collectors reduce fossil fuel use and dependence on foreign energy sources

U.S. Air Force (Beth Holliker)

of a tactical solar-PV system are driven by its lightweight, portable nature:[12]

- high power-to-weight ratios (greater than two times higher than others)
- minimal battery and fuel transport
- high field survivability (silent, camouflaged, low angular or thermal signature)
- targeted energy needs (battery recharging, water purification, personal electronics, transportable energy for command centers, medical and survival kits).

Additional solar-PV advantages include relatively simple operator and maintenance training, and since there are no moving parts, reliability is much higher than for combustion cycle–based systems. Current costs for commercial solar-PV panels of 125 watts or larger are approximately $4.50 per watt, but are projected to drop to ~$1 per watt by 2015 as economies of scale increase supply and higher efficiency technologies mature. Efficiencies are on the order of 6 to 15 percent (up to 30 percent laboratory demonstrated) for peak solar irradiance.[13]

The Army's Tactical Alternating Current System (TACS) and Hybrid TACS (HTACS, which adds a small wind turbine generation capacity) represent the state of the art in solar-PV for tactical battlefield usage, and each "system is supplied with clean, silent power from a lightweight, flexible, and durable solar array. Excess power from the solar array is stored in a battery bank for nighttime or cloudy day use, and backup power is supplied by a generator connected to the system's control unit."[14] TACS components include:[15]

- 2.8 to 3.1 kW solar array
- power management center
- battery bank
- 4 kW AC inverter
- 4 kW backup generator.

The TACS system was designed for 6 amps continuous at 120 VAC (the average load of a typical tactical operations center) with a peaking load demand capability of nearly 60 amps. When the system is operated at its rated output of 6 amps, 120 VAC, average system performance expectations include:[16]

- generator on-time of 5 to 10 percent in sunniest areas and 15 to 20 percent in overcast areas
- silent running 80 to 95 percent of the day
- 10 percent of fuel and maintenance requirements compared to diesel generator alone
- lifecycle cost payback estimated at 1 to 2 years for deployed systems and 8 years for fixed-base support (fully burdened cost of fuel lower for support applications).

For larger deployable systems, Skybuilt Power developed and field-tested a mobile power station named the transportable hybrid electric power station (THEPS), which combines rigid solar panels, a wind turbine, storage batteries, and an augmenting diesel generator to guarantee continuous power during prolonged periods when wind or solar alone do not meet power requirements. THEPS provides, on average, 5 kW of power output depending on the weather conditions.[17] The inclusion of the diesel generator means the warfighter is not entirely freed from fuel logistics; however, even this challenge can be overcome if a system such as THEPS can obtain its diesel fuel via an in-situ resource such as biomass conversion.

Chief of naval research leads interagency panel on energy innovations and Federal collaboration opportunities

U.S. Navy (John F. Williams)

while the current state of the art focuses largely on solar-PV technologies, deployable biomass conversion has been demonstrated under field conditions

While the current state of the art focuses largely on solar-PV technologies, deployable biomass conversion has been demonstrated under field conditions. Biomass conversion, also known as a biorefinery, mimics the digestion process. As demonstrated in a particular 3-year, $850,000 Army development program, the process begins with taking organic waste such as food leftovers, plastics, and papers and mixing it with water and enzymes to metabolize the organics into ethanol. Waste that does not get converted in this manner is dried and burned to produce a mixed gas of light hydrocarbons, carbon dioxide, and hydrogen. The ethanol and composite gas are then combined 9:1 with conventional or biodiesel and combusted to directly generate electricity.[18]

The appeal of biomass conversion becomes obvious when one considers that each soldier in the field produces an average of 4 to 6 pounds of trash daily. Currently, field practice is to establish "burn pits" to prevent the accumulation of this waste and to address the attendant sanitation and disease risks. A transportable biorefinery the size of a semitrailer can process the daily waste produced by 500 soldiers and generate 60 kW, enough for a large mess tent or three homes. As an added advantage, the excess thermal energy produced during the combustion process can be used to heat water for camp use.

It is easy to see that the American way of war is energy intensive. Just as renewable energy is an invaluable tool for the JFC to address battlefield requirements, it follows that BRE can also be an indispensable tool for providing shaping, stability, and reconstruction for our security partners, particularly those in the developing world who live the reality of energy poverty.

Applying BRE across the JOpsC

The JFC benefits twofold through the employment of renewable energy technologies: on the battlefield via reduced sustainment requirements for his own operating forces, and also as an effective tool to be employed for security cooperation, stability, and reconstruction activities. Since access to reliable and relatively inexpensive energy is a requirement for healthy living and the basis for a decent quality of life, the ability to employ renewable energy generation capabilities is a critical way to contribute to security and stability.

The idea of utilizing renewable energy sources fits neatly within the JOpsC set forth by the Capstone Concept for Joint Operations (CCJO). The employment of this technology on the battlefield to sustain ourselves, and its use to help build host nation or partner nation capacity to sustain themselves, can contribute greatly to the JFC's ability not only to accomplish his tactical missions, but also to enhance reliable energy capacity throughout an entire area of operations across the range of military operations.

Reducing reliance on nondomestic energy sources and increasing the deployment and use of renewable energy technologies enable the achievements of stated goals or enhance the desired capabilities discussed in many, if not all, of the Joint Operating Concepts (JOCs) and CCJO. The CCJO "proposes that future joint force commanders will combine and subsequently adapt some combination of four basic categories of military activity—combat, security, engagement, and relief and reconstruction—in accordance with the unique requirements of each operational situation."[19] Along with the idea of sustaining the force during all phases across the range of military operations, as addressed in the MNF–W JUON, it is important to understand the other dimension of introducing renewable energy as a viable security cooperation tool to assist nations in building reliable energy capacity and also possibly setting conditions for potential operations in a particular country or region.

There are currently six approved JOCs:

- Major Combat Operations (MCO)
- Homeland Defense and Civil Support
- Military Support to Stabilization, Security, Transition, and Reconstruction Operations (SSTRO)
- Deterrence Operations (DO)
- Irregular Warfare
- Cooperative Security and Engagement.

Although somewhat different in focus, each JOC shares common themes and discusses many issues that the introduction of renewable energy technologies can help address, relieve, contribute to, or solve.

Consider the following passages from the JOCs to illustrate some of these common themes:

The U.S. economy and military forces will have and use technological superiority that provides a competitive edge that also creates vulnerabilities that adversaries might exploit. Planners must address U.S. vulnerabilities, identify ways of eliminating them where feasible, and compensate for them when necessary.[20]

battlefield renewable energy may have the indirect effect of building trust with the local populace by not overburdening any existing system and possibly even building energy capacity in that area

This reference from the DO JOC highlights the need to identify and reduce vulnerabilities that enemies might exploit. This not only applies to the national strategic need to reduce the reliance on foreign sources for our energy needs but also implies the need to reduce opportunities for an enemy to attack and interdict supply lines. By steadily institutionalizing the use of renewable energy technologies in the continental United States and deploying BRE technologies overseas, we take significant steps in minimizing our strategic, operational, and tactical vulnerabilities.

Next, from the MCO JOC, we read, "Innovative methods for replenishing widely distributed combat forces with critical fuel, water, and munitions receive emphasis including the development of alternative sources for bulky commodities."[21] This passage recognizes the fact that the very nature of future combat operations presents unique challenges to the resupply and logistic considerations for widely distributed forces across expansive areas of operation. It directly ties initiatives such as the MNF–W JUON to the requirement to develop, deploy, and utilize new methods and technologies to help sustain the force and reduce the logistic tail, thus contributing to increased force protection. Also, by the very nature of distributed operations, the use of BRE helps sustain forces in the field and may have the indirect effect of building confidence and trust with the local populace by not overburdening any existing system and possibly even augmenting or building energy capacity in that particular area.

The Earthquake in Haiti

Although tragic, the recent earthquake in Haiti presents an opportunity to utilize some of the technologies discussed in this article. The mass devastation from the earthquake compounded an already stressed economic condition in a country that had an unreliable infrastructure at the onset. Moreover, the lack of major road arteries to reach outlying communities added to the complexity of efforts. From the start, gasoline was in high demand and extremely short supply. Electric power generation capability was stressed, impeding basic services and medical response. Some of these renewable technologies may be just what is required to help Haiti not only recover, but also grow a power infrastructure in both the major population centers and hard-to-reach outlying communities. Understanding that the requirement to meet immediate survival and health needs is the first phase of relief operations, we should plan in subsequent phases to introduce renewable energy sources to comprehensively build a lasting capability for nations such as Haiti. These capabilities should become routine planning considerations in all operations ranging from humanitarian assistance/disaster relief to security cooperation activities to major combat operations.

The next two passages out of the SSTRO JOC highlight the applicability of introducing these technologies in realms other than major combat operations, such as security cooperation: "Operational capabilities focus on capabilities associated with accomplishing a desired end state [i.e., major mission element] within a SSTR operation, e.g., delivering supplies of food and medicine, rebuilding a power generation and distribution system."[22] Moreover, in "many of the major urban areas, the government's inability to provide the basic public services heightens the potential for chaos and civil unrest. Critical infrastructure most likely will be austere—water and sewer services in disrepair; limited or compromised electrical service; and inadequate educational opportunities and medical care."[23]

The current state of affairs in Nigeria provides an excellent scenario for how the use of these technologies in security cooperation could positively shape the theater strategic environment. As previously noted, this energy-impoverished nation could be a major benefactor of expanded cooperation activities modeled after the approach taken by organizations such as SELF. As a key strategic partner in Africa, Nigeria needs to be a stable nation that can provide for the basic needs of its entire citizenry. Although the deployment of renewable energy will not alone solve the ongoing ethno-religious issues in the northern states, this technology could immediately assist in the southern portions of the country. However, even in the north, most of the tensions center on the fact that the government is seen as an ineffective provider of basic human services. Building sustainable, reliable energy solutions via security cooperation programs could serve to reduce those underlying tensions and help build confidence in the national government.

Many of these JOCs discuss the need for forward presence, persistent engagement, security cooperation, and capacity-building as means to contribute to security and stability. Most of these concepts, while citing the fact that lack of resources and useable energy can be a source of destabilization, do not address the option of deploying renewable technologies, either through military engagement programs such as security assistance means, exercise-related construction funds, or other means, such as National Defense Authorization Act (NDAA) 1207 funds or in cooperation with nongovernmental organizations (NGOs) via USAID. The Shaping Operations JOC currently in development is expected to describe the long-term, integrated joint force actions taken before or during crisis to build partnership capacity, influence nonpartners and potential adversaries, and mitigate the underlying causes of conflict and extremism.[24] This document may be an ideal place to discuss the JFC ability not only to reduce the logistic tail and positively impact partner nations' already strained infrastructure but also to contribute significantly to the development of sustainable energy capacity.

Advocacy for Policy Change

The 2007 *Transforming the Way DoD Looks at Energy* study devotes an entire chapter to the recommended way ahead for policy change.[25] To summarize the recommendations, a comprehensive change in culture must be achieved for renewable energy solutions to reach the joint force. This culture change should not focus solely on deploying renewable technologies for our forces but should also encompass military engagement programs such as security assistance, exercise-related construction funds, and NDAA 1207 funds. Interagency cooperation, particularly with the Department of State, USAID, and DOE, must be fostered. Change begins from the top down through all the strategic planning conducted by DOD and ends through the Planning, Programming, Budgeting, and Execution (PPBE) process. Strategic leadership becomes the key throughout this process to ensure the right amount of emphasis remains on delivering

U.S. Air Force (Thomas Cook)

British Viking combat vehicles refuel after conducting convoy through Helmand Province, Afghanistan

renewable energy solutions to the joint force. The current Quadrennial Defense Review (QDR) provides the best opportunity for this complete transformation to occur and must address energy reliance throughout all the JOCs.

A bottom-up approach from the combatant command's review of priority requirements should also address renewable energy. Requirements must migrate from the JUON to the programmed requirement process—most notably the input into the integrated priority list. Once there, the Joint Capabilities Area managers, as well as the J7 and J8 staffs at the combatant command and Joint Staff levels, must begin to advocate for renewable energy to be included in the strategic planning system. Once introduced into the Joint Capabilities Integration and Development System and Joint Requirements Oversight Council processes, the requirements must be introduced and advocated through the Chairman's Risk Assessment and the CCJO. These strategic documents inform the QDR and PPBE systems. Each combatant command deputy commander would be a natural advocate for these requirements.

Moreover, as these requirements and concepts emerge in DOD strategic documents, Congress should ensure the renewable energy requirements reach the budgetary cycles of the NDAA. These planning and budgetary systems allow further advocacy in the private sector as joint commanders begin to implement renewable energy solutions throughout the joint operating environment.

Recommendations

BRE provides the JFC deployable, sustainable electrical power generation through a variety of renewable means—most commonly solar, wind, and biomass conversion. The application of BRE throughout the JOpsC gives the JFC a cross-spectrum force enabler by decreasing reliance on petroleum-based energy logistics. On the one end, BRE enhances force protection and increases the tactical flexibility of forward operating units, a capability already delivered to Iraq in response to the 2006 MNF–W JUON. At the other end, BRE can provide the JFC operating in the developing world a powerful tool for shaping the area of operations, directly through security cooperation and indirectly through coordinated support to interagency and NGO efforts to provide renewable energy systems for local population development.

In the event of conflict or disaster, the JFC can directly provide BRE systems, technology, and expertise to the affected region to address basic population needs and promote postconflict stability and reconstruction. Then, once conditions permit, BRE can become the basis for transitioning the host nation's energy infrastructure to one that is usable, sustainable, and distributed, thus building the host nation energy capacity in a manner that ensures the basic needs and aspirations of its people are met.

To date, the joint force has not recognized the overall value that BRE brings to the fight, and thus DOD has not systemically embedded it into its consciousness and culture. Therefore, we advocate a twofold approach to this transformation. It begins from the top down, with strategic leadership ensuring emphasis remains on delivering renewable energy solutions to the joint force through all the strategic planning conducted by DOD. From the bottom up, the combatant command's review of priority requirements should also address renewable energy. The approach to this review should migrate from the urgent needs approach to the programmed requirement process—most notably the input into the integrated priority list—and from there should merge with the top-down transformation by having the combatant commander and/or deputy advocate for renewable energy be included in the strategic planning system. Only a sustained effort from both sides will bring about the transformation needed.

The American way of war is too energy intensive to justify sustaining it with Industrial Age technologies and approaches. The multifaceted nature of 21st-century warfare rewards stability through shaping the environment, addressing human needs, and preventing the seeds of conflict. Renewable energy is the critical enabler to succeed in these missions. **JFQ**

NOTES

[1] George W. Bush, Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," *Federal Register* 72, no. 17 (January 26, 2007).

[2] Defense Science Board (DSB), *"More Fight—Less Fuel": Report of the Defense Science Board Task Force on DOD Energy Strategy* (Washington, DC: Department of Defense, February 2008), available at <www.acq.osd.mil/dsb/reports/ADA477619.pdf>.

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[4] Ibid.

[5] U.S. Joint Forces Command (USJFCOM), *The Joint Operating Environment* (Suffolk, VA: USJFCOM Center for Joint Futures, November 25, 2008), 10–23.

[6] Solar Electric Light Fund (SELF) is a nonprofit, nongovernmental organization committed to "provide solar power and wireless communications to a quarter of the world's population living in energy poverty." See *SELF Vision, 2009*, available at <www.self.org/vision2.shtml>.

[7] According to the Energy Information Administration, Nigeria's average daily production in 2007 was 2.35 million barrels, making it the largest producer on the African continent.

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[10] Miriam Keith, *BEAR Base Solar Power System, Final Technical Presentation* (Wright-Patterson Air Force Base, OH: Air Force Research Laboratory, 2005), 3.

[11] Ibid., 4.

[12] Albright, foreword.

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[16] Ibid., 8–9.

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[22] JCS, *Military Support to Stabilization, Security, Transition and Reconstruction Joint Operating Concept 2.0* (Washington, DC: JCS, 2006), viii.

[23] Ibid., 15.

[24] JCS, *Irregular Warfare Joint Operating Concept 1.0* (Washington, DC: JCS, 2007), 15.

[25] Thomas D. Crowley et al., *Transforming the Way DOD Looks at Energy: An Approach to Establishing an Energy Strategy, Report FT602T1* (McLean, VA: LMI Government Consulting, April 2007), 4–1 to 4–11.

Turning **Fallujah**

By **WILLIAM F. MULLEN III**

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Fallujah has taken on tremendous significance because of what happened there from April to December of 2004. It has become one of the touchstone battles of the Marine Corps involvement in Operation *Iraqi Freedom* because of the intensity of the fighting and the number of Marines and Sailors killed or wounded. It is not a large city in either area or population. It is a compact, dirty, beat-up town that always had a sinister reputation, even under the Saddam Hussein regime, as a smuggling and black market center. Its people are known as xenophobic, their general attitude seeming to be "us Fallujans against the world." This feeling is directed not only at coalition forces, but also at any Iraqis not specifically from Fallujah. The city will certainly not be considered a vacation hot spot any time soon.

My personal involvement there started in December 2004 when I went to Iraq on a Pre-Deployment Site Survey (PDSS). I was

Marine Corps M1A1 prepares to fire on insurgent stronghold during Operation *Al Fajr*

U.S. Marine Corps (Jonathan C. Knauth)

the operations officer for Regimental Combat Team (RCT) 8, and we were to replace RCT 1 in February 2005. My involvement finished, at least for the time, when I departed in October 2007 as commander of 2d Battalion, 6th Marines (2/6), having spent the previous 7 months in control of the city.

This article is not an attempt to tell how we did everything right and solved the riddle of "turning Fallujah" from being a constant source of trouble and anxiety to an example of what could be accomplished in Iraq given the proper counterinsurgency (COIN) techniques. We did not do everything right, and our success there, such as it was, could only be described as the culmination of years of dedicated struggle and effort on the part of thousands of Marines, Soldiers, and Sailors, as well as members of the Iraqi Security Forces, many of whom were wounded or killed there. Success was also a result of the fortunate coming together of several different events, all happening around the same time, which happened to coincide with my battalion's arrival.

This article briefly provides what I know of the history of Fallujah from 2004 to 2007, the techniques we used as an RCT to try and maintain control of both the town and the surrounding area during 2005 and early 2006, some lessons learned that I took away from observing the units that operated underneath RCT 8 during that year (one of which was 2/6, but under a different commander), the preparations we made in 2/6 after I took over to be ready to return to Fallujah, and finally the specific steps we took to capitalize on the conditions we found when we arrived in late March 2007. I firmly believe it was the preparations made while training prior to the deployment that enabled us to recognize what was happening in Fallujah and turn it to our advantage. We also developed an approach to turning Fallujah that resonated with the citizens there and generated a level of success that well surpassed what we expected. It was an amazing experience, and I feel privileged to have been part of it.

Background

Fallujah in December 2004, during Operation *Al Fajr* (the Dawn), was a dark, haunted place. The smell of death was everywhere, and RCT 1 was conducting mop-up operations throughout a largely deserted city. The amount of destruction rivaled what I remember from Sarajevo in 1995. Most of the heavy fighting was over, but enemy snipers and small ambush elements were scattered in various places. These were the die-hards who refused to flee or surrender. Marines would go from building to building, clearing each one (they had already been cleared many times), and would encounter these small groups of enemy. The encounters would be sharp, violent, and short. If the enemy was not killed in the initial engagement, the Marines would pull back and blast the house with whatever was available—tank main gun fire, heavy machineguns, or in some cases air-delivered ordnance. The city infrastructure was in shambles as sewer and water lines had been ruptured, pumping stations destroyed, electrical lines cut, and transformers blown. Civil Affairs units were moving in along with engineer units to begin restoring the city to something that would support habitation. Plans were being laid for the reintroduction of the population, their humanitarian support, and the conduct of elections at the end of January 2005. Needless to say, there was a great deal to see during our PDSS.

the city infrastructure was in shambles as sewer and water lines had been ruptured, pumping stations destroyed, electrical lines cut, and transformers blown

The RCT 8 planning effort focused on building off the momentum achieved during Operation *Al Fajr*. RCT 1 had built a berm all around the city and established six entry control points to regulate access to the city as people returned. The elections of January 2005 had not been overly successful since the Sunni population of Anbar Province (where Fallujah is located) rejected the election and refused to participate in it. The small towns near Fallujah all had some enemy presence, and the roads were pockmarked with improvised explosive device (IED) blast marks and craters. Each was another potential IED, as the enemy had a strong tendency to reuse sites.

The RCT 8 plan and subsequent campaign, which started in March 2005, involved a "clear, hold, win, won" approach that was articulated by Sir Robert Thompson in *Defeating Communist Insurgencies*. The enemy was pushed out of each population center, and then measures were implemented to maintain a hold on that center and win over the population by providing Civil Affairs support, security, and the rejuvenation of local governance and business. The area could be considered "won" if the population was secure and cooperating with coalition or Iraqi forces against the enemy, and all was quiet. While these steps were occurring in a sequential fashion, RCT 8 forces, operating mainly from Camp Fallujah, would sweep through uncleared areas to find weapons caches, keep roads clear of IEDs, and disrupt enemy operations. Fallujah had already been cleared, and the hold and win processes were already in motion. The towns of Karmah (northeast of Fallujah), Saqliwiyah (northwest), and Ameriya and Ferris (directly south) were all cleared sequentially, and the hold, win, won processes were started for each. This was essentially what kept us occupied for 2005 and early 2006. The only major exceptions to this process were the constitutional referendum in October and the national elections in December 2005. These entailed major planning efforts and security

U.S. Marine Corps (Jonathan C. Krauth)

Artillery shell converted into improvised explosive device

operations that resulted in successful elections as measured by a lack of violence and broad Sunni participation.

Lessons Learned

As the campaign plan unfolded over the course of the year, I had many opportunities to go out on patrol and observe units in action. Enemy activity was light when we first got there in February 2005 but increased significantly throughout the year, with the exception of the two elections when everything was locked down and no driving was allowed (the enemy seemed attached to their cars and rarely conducted attacks if they could not get away by automobile). In getting around the RCT area of operations, I was able to make some general observations about what worked and what did not work with regard to COIN operations.

During the year we were in the Fallujah area, 11 different battalions worked for us at one time or another, and some came much better prepared to conduct COIN than others. The better prepared units generally had much more involved leaders at every level, most of whom clearly understood the realities of COIN operations, such as the fact that the enemy is rarely seen; attacks are generally short in duration and designed to cause casualties and frustration; the people are only trying to survive being caught between coalition forces and the enemy and therefore seem indifferent; and lashing out in frustration generates more enemies to fight. In addition, given the operating environment among the people of Fallujah, escalations of force where Iraqi civilians were injured or killed happened relatively frequently, and some units handled the results much better than others. The importance of this was that if the Marines thought there would be a "witch hunt" with them as the focus if they pulled the trigger on an Iraqi civilian, they would hesitate too long, sometimes allowing a suicide bomber or vehicle in close enough to cause casualties or damage to coalition forces.

as the unit went into its defensive crouch, it ceded initiative to the enemy with the result that attacks increased significantly, which only reinforced the crouched, defensive mentality

Other observations were that units that were too defensive caused a decided reaction from the enemy. As the unit went into its defensive crouch, it ceded initiative to the enemy with the result that attacks increased significantly, which only reinforced the crouched, defensive mentality. Units that stayed in vehicles while on patrol had the most difficulty as they could not see what was going on around them well enough to spot IEDs, and they were isolated from the population and so had no chance to win their cooperation against the enemy. Lastly, Marines who were bored and frustrated through not understanding why they were even in Iraq, or what they were specifically trying to accomplish, tended to come up with ways to entertain themselves, the majority of which were counterproductive. This trend was amplified by the nearly ubiquitous presence of hand-held video cameras among the Marines and the availability of the Internet on the large bases where they could post video on YouTube or other similar sites.

U.S. Marine Corps (Robert K. Blankenship)

Iraqis wait to receive medical supplies, water, and blankets from Iraqi Red Crescent workers

Preparations

Upon my return to Camp Lejeune from Iraq, I began to prepare to take over 2/6. From my observations over the previous year, several themes predominated. The first was that I needed to coopt the entire leadership chain into the appropriate way of conducting COIN. Leaders had to understand that the supervision of their units was absolutely crucial to ensuring that we did the least harm possible to begin with, and then built relationships with local Iraqis to win them over to our side. They had to understand that the keys to success were the Iraqi army and local police forces becoming effective. They had to keep their Marines from lashing out in frustration at the inevitabilities of COIN operations and focus on ways to outthink the enemy in order to get *them* to react to *us* instead of us reacting to them. We had to balance aggression (a natural Marine tendency) with caution to avoid falling into enemy traps. We had to root out complacency and keep everyone occupied and focused throughout our time in the combat zone. All of these things seem common sense, but are much easier said than done. It takes dedicated leaders, most particularly at the fireteam, squad, and platoon levels. Unfortunately, these leaders are always the youngest and least experienced, with the fireteam leaders in particular having the least amount of training of anyone in the chain of command.

Upon taking over 2/6, my sergeant major, executive officer, operations officer, and I formulated our "preparing the mindset" campaign plan to get the battalion ready to return to Fallujah (where they had just operated from October 2005 to April 2006). The basic theme of the plan was relatively simple. We presented information to the leaders in the battalion, reinforced it through guided discussions, held other related leadership discussions throughout the training period,

and placed posters and signs throughout the battalion area, all of which presented aspects of the original theme. We took the time to answer questions and address concerns from the previous deployment. These were mostly related to escalation of force situations and tactics that the Marines thought made them more vulnerable to snipers. Aside from general tactics, we also had to get our personnel to understand that the Iraqi army and police forces, as inept and corrupt as they often were, needed to be the focus of our effort. If we had leaders or Marines who were openly contemptuous of them, treated them poorly, or shunned any involvement with them, we would never be able to get them to improve. I would not say that we achieved complete buy-in from all hands, but enough of the battalion got onboard that when we went through Mojave Viper (the graduation exercise for all deploying units conducted at Twentynine Palms, California), the evaluators specifically commented on the level of understanding and cooperation in the battalion.

Back to Fallujah

Once deployed to Fallujah, we found a city where the security situation had deteriorated significantly. There were many reasons, only some of which involved the specific tactics, techniques, and procedures of the two battalions that preceded us. Al Qaeda in Iraq had a strong presence in Fallujah and, given the symbolism of the city as a result of the 2004 fighting, sought to openly reclaim it. In addition, since the tribes did not have much influence in the city, the Anbar Awakening, which was gathering momentum to the west, had not reached Fallujah. Ambushes, mortar and sniper attacks, and the ubiquitous IEDs predominated. Murder and intimidation of Iraqi civilians and police were rampant. The city council was still functioning (it had been reestablished in early 2005), but the previous two chairmen had been assassinated and new candidates for the position were scarce. The police had taken significant casualties since they were reestablished in 2005 and only came out of headquarters in the center of the city in large groups to conduct raids. A new enemy tactic had also been introduced: suicide truck bombs that had chlorine gas mixed in to magnify the damage. One such attack against the headquarters of one of the Iraqi army battalions happened just as we were arriving in Fallujah. With these events as background, which we had watched as we made our final preparations to deploy, we conducted the standard 2-week turnover with the unit we replaced, and then ensured that they got out of the area safely and on their way home.

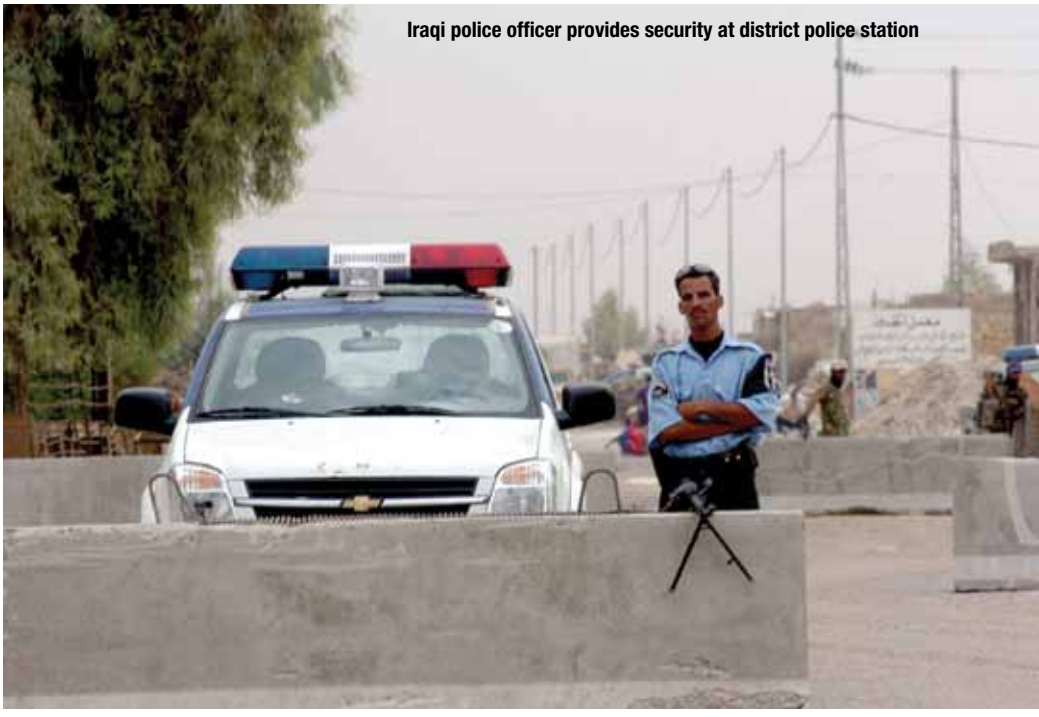
After observing the city and operating conditions for a week or so, we saw that things had already started to change prior to our arrival. A new police chief had been hired and seemed motivated to get out and fight the terrorists who were dominating Fallujah. The new Iraqi army brigade commander for those forces in the city was professional and dedicated. He had cleaned house among the officers, getting rid of a good deal of dead weight. Also, a new mayor had been appointed by the city council, and he was anxious to regain control of the city.

one by one, precincts would be swarmed by Iraqi army and police units backed up by 2/6 Marines

We also recognized that the approach used by coalition forces to that point had to change. It was little better than the arcade game of "whack a mole" and had made little progress toward ending the insurgency. Additionally, we saw that the city of Ramadi (30 to 40 miles west of Fallujah) had changed remarkably for the better, so I sent my battalion executive officer to observe what was being done. He came back with the shell of a plan, based on what had worked in Ramadi, to restore security and turn Fallujah over to the police.

The plan that we formulated, gained approval for, and executed starting at the end of May 2007 consisted of breaking the city into 11 precincts. One by one, precincts would be swarmed by Iraqi army and police units backed up by 2/6 Marines. Cement barriers were placed around the precinct to restrict incoming and outgoing traffic to two openings, each guarded by Iraqi police. A precinct headquarters was established and manned by all three forces. Locals were recruited to form a neighborhood watch under the supervision of the police. Lastly, food bags that could feed a family of four for several days were distributed by the police while Civil Affairs teams assessed the precinct's infrastructure needs. These needs were then prioritized and addressed as quickly as possible. It was a modified, more focused, version of "clear, hold, win, won."

The effects of this plan were remarkable in how quickly they started to produce results. The cement barriers restricted traffic greatly, which intimidated most insurgents. As noted earlier, if they could not flee in a car, they were hesitant to attack. An additional factor in this traffic restriction plan was that just prior to kicking off the entire operation (which we named *Alljah*), a suicide car bomb had attacked a funeral procession for an Iraqi who had fought al Qaeda in Iraq to the west of the city. Many civilians, including women and children, were killed or injured. The



Iraqi police officer provides security at district police station

U.S. Marine Corps (Brook R. Kelsey)

mayor declared that no civilian vehicles would be allowed to drive in the city anymore, and it was strictly enforced by the police. It was gradually relaxed over the ensuing summer, but a vehicle registration system was implemented, again by the police.

In addition to the traffic control measures, cleanup crews were hired city wide. Local artists were hired to paint cement barriers and put instructional signs on them with the result that complaints about the barriers were reduced significantly. City infrastructure projects that had been delayed or cancelled due to the violence were finished. Restoration of water and electricity services was given the highest priority and had the fastest positive impact on the lives of the average Fallujan. In each precinct, loudspeakers similar to those used on mosques were mounted on the precinct headquarters to play public service announcements, news, and the national anthem on a daily basis. An added benefit was realized when the national soccer team went to the finals of the Asia Cup. We had the game broadcast over the speakers, and the goodwill generated by this, coupled with the fact that the Iraqi team won, was enormous. Finally, local precinct councils were established, which allowed complaints to be voiced and issues specific to that precinct to be addressed with solutions developed and implemented by the inhabitants.

Many other measures were implemented, but those mentioned above provide a snapshot of what was occurring during the summer of 2007. The combined results of all of this were profound. Police control was established to the point where the army, which had generally been an irritant due to its largely Shia makeup, was able to redeploy entirely to an area well north of Fallujah. Police who had been afraid to wear their uniforms off duty or even to return to their homes for fear of assassination were now considered public heroes and went to and from their homes in uniform.

Violence in all forms dropped to unheard-of lows. In the first 5 weeks of our deployment, we experienced 3 fatalities and 25 wounded. In the 4 months after the kickoff of Operation *Alljah*, we experienced only two lightly wounded. IED attacks were few and far between, and in many cases those emplaced by the enemy were getting reported as soon as they were laid. Whereas sniper attacks had been prevalent early in the deployment, when General David Petraeus and Katie Couric visited in early September, we were able to take them and their entourage through a market area that had seen the worst of the sniper activity without incident. Coalition generals who had seen the bad days of Fallujah and returned to visit marveled at what they saw now. We marveled also. We expected good results, but what happened as a result of *Alljah* surpassed anything we anticipated.

Everything mentioned above, coupled with many factors not mentioned, generated an almost snowball-like momentum for success that we could only partially claim credit for. It also continued after we left, as evidenced by an email sent to me by the battalion commander who relieved us. He reported that over a month after we departed, he sat under a canopy with the mayor, police chief, and many prominent sheiks right on the main street to watch a parade honoring the Fallujah police. Whereas less than a year before, the police were afraid to go out on patrol or even return home at the end of their shift, they were now parading down the middle of the city and being feted by the community they were protecting and serving.

Pointing out what did not work as well as what did might also prove useful for forces heading out to conduct COIN operations. Once again, we did not do everything correctly, but we learned from our errors and found a solution that worked specifically for Fallujah, which may or may not be applicable to other

Marines post security at Jolan Park during Operation *Al Fajr*

U.S. Marine Corps (Jeremy W. Ferguson)

places and conditions. To start with what did *not* work, a reliance on vehicle patrolling, heavy-handed conventional tactics, heavy force protection measures that kept the local population away from coalition forces, minimal reliance on Iraqi Security Forces (for a variety of reasons, some of which were valid), and a focus on just surviving the tour instead of trying to actually win could all be said to be seriously detrimental to COIN operations. What eventually worked was a combination of measures that softened the conventional approach, got in close to the population to provide them a sense of personal and family security, included the Iraqi Security Forces in much more effective ways, and gave everyone involved both a stake in the measures being taken and a sense of real progress. These are the measures that would likely be more successful in other COIN environments. The idea of trying to do the least amount of harm to begin with is an ideal place to start.

At the beginning of our tour in Fallujah, people went about their business quickly to take care of necessities and get off the streets. At the end of our tour, people were out playing volleyball and soccer, the city was taking pride in its appearance and its police, and reconstruction, and in some cases new construction, was taking place all over. As we patrolled on foot, we could feel the optimism and pride of the citizens. Even though there were many expressions of gratitude from the people, what was most gratifying to me was when several Marines who had been on the battalion's previous deployment to Fallujah observed that the situation had changed:

whereas less than a year before, the police were afraid to go out on patrol or even return home at the end of their shift, they were now parading down the middle of the city

whereas on that previous tour they had seen no progress at all and lost many of their fellow Marines, on this deployment, they saw tremendous strides and lost few of their peers. I gave them a synopsis of what the battalion had accomplished about midway through the deployment to reinforce our success and ensure they knew its full extent. The sense that Fallujah had been turned and that we might not have to keep coming back to Iraq was starting to take hold.

Lastly, while the history described here can only be considered a microcosm of what happened in Iraq from 2003 to 2009, it can serve as a potential example for current COIN efforts in Afghanistan. Every aspect that has been addressed by General Stanley McChrystal in his guidance for operations in Afghanistan was what worked for us in Fallujah. Getting in close to the people and providing them with a sense of security caused them to begin to trust us and turn completely against the insurgents. Pushing the Iraqi Security Forces forward, the police in particular, caused them to step up and take responsibility for their city. The beginnings of economic resurgence followed the reestablishment of adequate security, just as we are seeing in areas of Helmand Province today.

Operations in a COIN environment will continue to be frustrating and hard to measure, but when understood *and believed in* by the entire leadership chain, and then applied properly across the area of responsibility, they can have truly strategic effects. Fallujah was written off several times as hopeless by many people. Today, it can be offered up as one of several models for what can be accomplished given the right will and leadership. **JFQ**

Citizens wait to be checked for weapons and identification before entering Fallujah through control point

U.S. Marine Corps (Robert K. Blankenship)

The Iraq Experience and Domino Theory Revisited

By MARVIN BAKER SCHAFFER

With the passage of time and the contentiousness of the Iraq conflict fading, it should be possible to make a more objective assessment of the rationale leading to that war. The overwhelming public perception is that the Iraq War was a misguided attempt to track down and stop Saddam Hussein's weapons of mass destruction (WMD) program. However, while the WMD rationale was raised by the Bush administration itself and certainly influenced the decision to engage in hostilities, it was not the tipping point.

Sculptures of Saddam were removed from Republican Palace towers after overthrow of regime

DOD (Jim Gordon)

The principal objective of the Iraq conflict was to decrease the likelihood of additional attacks on the American homeland by striking a decisive blow against the global terrorist threat. The hoped-for sequence of events was regime change in Iraq followed by destabilization of Iran and subsequent collapse of several significant components of the global terror network. That collapse, of course, did not occur. Iran, instead of being destabilized, was energized to exploit the chaos in Iraq and to increase its support of Hizballah and Hamas, both terrorist organizations as defined by the State Department. Attacking Iraq was a rational strategy but insufficient in and of itself.

Flash back to an early (hypothetical) 2003 crisis meeting of the National Security Council. The subject of discussion was the threat of global terrorism. What were the elements of the threat, should these be attacked, and which subset would give the greatest leverage for protecting American interests at home and abroad? It quickly became apparent that there were a half-dozen major attack points and about 20 smaller ones. They could not all be addressed simultaneously, and a sequential attack could take a decade. Prudence dictated that, if warranted at all, a small number should be attacked in the hope of undermining and bringing down the rest with minimum loss of American life. The choice made in 2003 was to attack Iraq, with continuing but decreased attention to Afghanistan.[1]

Critics of the March 2003 Iraq invasion maintain that it was the wrong war to defeat global terrorism. They assert that the exclusive focus should have been on Afghanistan and that the Iraq incursion diluted that effort. Are the critics right or misguided? Would an intensified attempt to capture or eliminate Osama bin Laden have been more productive than the protracted but arguably successful conflict in Iraq? To reiterate, this analysis concludes that the twin focus on Iraq and Afghanistan was correct and indeed *necessary*, but not *sufficient*. A third attack should have been on Iranian WMD facilities with the collateral hope of achieving regime change.

More generally, the 2003 objective should have been decisive engagement of linchpin rogue dominos,[2] the ones most likely to cause collapse of the myriad of terrorist entities on the world scene. An example of the domino process was the response of Libya, which came to terms with the West by renouncing its WMD program in 2003, arguably because of Iraq. We are left with Iran, Syria, Hizballah, Hamas, and al Qaeda (among others), still viable and all still advocating terrorist-type destruction of American interests.

Those issues are treated next, starting with an analysis of the global terrorist threat as seen through the eyes of the National Security Council in early 2003. We then proceed to identify the most lucrative dominos.

About half of the 42 groups, through their direct actions or by association with al Qaeda, could be characterized as threatening to American interests. Figure 2 summarizes major linkages and state sponsorships of the most threatening entities.

The interrelationships were pervasive. Eight of the threats to the United States were linked to al Qaeda through either funding or training programs. Seven had sponsorship through funding, equipment, or training from Iran, four had some form of state support from Syria, and two had links to Saddam. It is evident that focus on a single entity would probably have been inadequate. It also suggests that attack of a strategically selected subset would have been more efficient than attacking all.

the 2003 objective should have been decisive engagement of linchpin rogue dominos, the ones most likely to cause collapse of the myriad of terrorist entities on the world scene

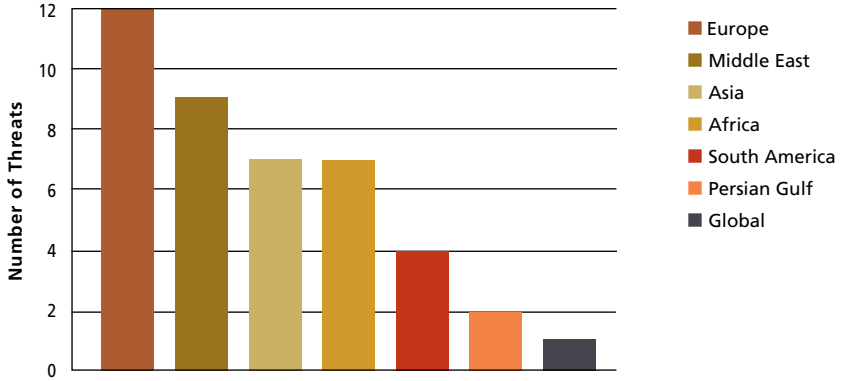
The 2003 Global Terrorist Threat

In October 2002, the Department of State had a list of more than 200 entities linked to terrorism.[3] After eliminating individual terrorists and commercial organizations, that list can be narrowed to 42 groups based in 23 countries,[4] the regional distribution of which is displayed in figure 1.

It is clear that terrorism has been a global phenomenon. The largest concentration of threats was in Europe, half in Northern Ireland, but the rest of the European Union was also infested. The Middle East with a focus on Israel and Palestine followed next. Significant threats existed in central and far eastern Asia, Africa, South America, and the Persian Gulf. Only one "global threat" had been identified, al Qaeda, responsible for attacking the World Trade Center in 1993 and for devastating attacks on the World Trade Center and the Pentagon in 2001.

Al Qaeda, with the most extensive terrorist network, deserved high priority, and indeed was addressed on multiple fronts.[5] Diplomatic efforts had established a broad coalition to oppose it and included the United States, European Union, Canada, Australia, Russia, China, India, and Pakistan. Activities to constrain al Qaeda included intelligence collection, law enforcement, financial restrictions, and military operations. Operation *Enduring Freedom* in Afghanistan directed at both the Taliban and al Qaeda comprised 90 nations, the largest military coalition ever assembled. By early 2003, the bulk of Afghan territory had been liberated from Taliban control, and al Qaeda in Afghanistan had been substantially weakened.

Figure 1. 2003 Threat Levels



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However, al Qaeda has been a highly decentralized organization. Focus on al Qaeda in Afghanistan, or Iraq, or on specific cells elsewhere may alleviate the immediate threat in that local area but does not extinguish the global fire. Similarly, the focus on worldwide financial constraints had been extensive but apparently insufficient to dry up monies from obscure private sources in countries such as Saudi Arabia, Jordan, and Syria.[6] Furthermore, killing or capturing al Qaeda leaders had not accomplished the global task of destroying the network. Al Qaeda apparently does not qualify as a linchpin domino since there is no single point or small group of points on which to exert military leverage.

focus on al Qaeda in Afghanistan, or Iraq, or on specific cells elsewhere may alleviate the immediate threat in that local area but does not extinguish the global fire

Analysis suggests that al Qaeda might have been more readily defeated by expanded security support to those countries at risk, intensive cultural and moral arguments, more localized social and financial support, and elimination of state sponsorships including safe havens. Iran, Iraq, Syria, Libya, and others fell into the state sponsorship category in 2003. If those sources of support had been terminated, accompanied by heavy counterterrorist and nationbuilding efforts at the grass roots level, it would have been difficult and perhaps impossible for al Qaeda to sustain itself.

WMD were another important component of the global threat. From the National Security Council perspective, Iran, Iraq, Syria, and Libya all had potential for acquiring or developing nuclear and biological weaponry or had already deployed chemical weapons. Iran's nuclear program had previously been extensively exposed to the global media. Syria and Libya had attracted less attention in the WMD context but their terrorist activities were known, and as subsequent events have shown, they proved significant. We distill this information below to define a more efficient plan for combating the 2003 global threat.

Choices for Domino Leverage

It is plausible to postulate a domino effect in the international fight against state and insurgent terrorism. It was judged going into the invasion that Iraq would prove the linchpin domino, but it is now clear that the global deterrence impact of that war was limited. Was Iraq a correct target in March 2003? The alternatives are summarized in figure 3.

The methodology focuses on which terrorist entities, if any, were appropriate targets. For the United States, doing nothing would essentially constitute surrender or, at the least, demonstrate extreme weakness. Alternatively, if the focus was exclusively on Afghanistan, bin Laden might conceivably have been brought to justice but only by also invading border areas of a U.S. ally, Pakistan, where safe haven status had been extended to both the Taliban and al Qaeda. Additional possibilities were to strike Iraq or Iran, separately or collectively. It is observed that Iran was a decidedly more difficult opponent than Iraq militarily. However, regime change was not the only option. A more limited action against Iran combined with the Iraq attack might have been sufficient. Note also that if actions were confined strictly to Iran or Afghanistan, Iraq would remain on the scene, and the world might still believe Saddam possessed a WMD program. Despite the fact that destabilization of the Iranian regime was unfulfilled, it is reasonable to believe that Iraq was a legitimate target in 2003.

Figure 2. Sponsorships and Terrorist Linkages (2003)

Al Qaeda
- Al Gama ut al-Islamiyya > Egypt
- Al Jihad > Egypt
- Al Ittahad > Somalia
- Asbat al Ansar > Lebanon
- E Turkistan Islamic Movement > China
- Harakat ut-Mujahidin > Pakistan
- Islamic Army > Yemen
- Islamic Movement > Uzbekistan
- Libyan Islamic Fighting Group > Libya
- Tunisian Combat Group > Tunisia

Iraq
- Abu Nidal Organization > Israel, Lebanon, Sudan
- Mujahedeen-e Khalq > Iran
- Palestine Liberation Front > Israel

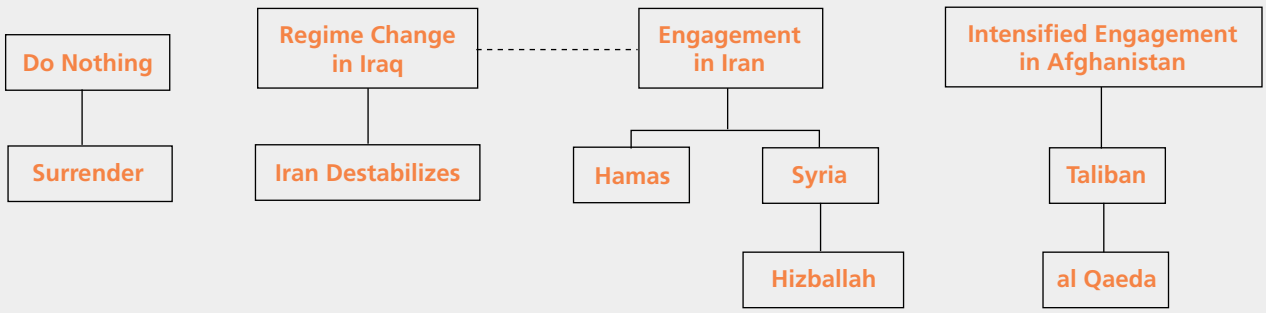
Iran
- Al Gama ut al Islamiyya > Egypt
- Hamas > Gaza Strip, West Bank
- Hizballah > Lebanon
- Palestine Islamic Jihad > Israel, Gaza, West Bank, Lebanon, Syria
- Salafist Group for Call and Combat > Algeria

Syria
- Palestine Islamic Jihad > Israel, West Bank, Gaza, Syria, Lebanon
- Abu Nidal Organization > Israel, Lebanon, Sudan
- Popular Front for the Liberation of Palestine > Israel, Lebanon
- Hizballah > Lebanon

Libya
- Abu Nidal Organization > Israel, Lebanon, Sudan
- Palestine Liberation Front > Israel

Afghanistan
- Taliban > Afghanistan, Pakistan

Figure 3. Bush Administration Choices in March 2003



Regime change in Iran was complex and chancy. The Ayatollah Khamenei was solidly entrenched in power with political opposition having been eliminated. Compounding the difficulties, Iran also had strength diplomatically since it exported oil and gas to China and imported advanced weapons and nuclear technology from Russia; both supported Iran in the Security Council of the United Nations. With those factors in mind, the decision to attack Iraq instead was made with the hope that Iran might then come to terms. That might have been more realistic if regime change in Iraq had been combined with a severe blow against Iran—say, by attack of its WMD capability. Even if the regime was not destabilized, it would have weakened and delayed that program.

It is observed that attack of Iran's WMD capability could have been accomplished with airpower alone, with no need for ground troops. The main elements of Iran's nuclear weapons program known to exist in 2003 are identified in figure 4.[7] Those with the most significance for global terrorism were the uranium enrichment plant at Natanz and the heavy water/breeder reactor facilities at Arak. An estimated 300 2,000- to 5,000-pound precision-guided bombs would have been required to destroy Iran's principal WMD assets.

The broad linkages between Iran and world terrorism are displayed in figure 5. The implication is that Iran was a nucleus of terror in the Middle East. A major blow against Iran could have undermined Syria, Hamas, Hizballah, and possibly the Taliban and al Qaeda as well. It is believed Syria (in the spirit of Libya) would have caved in because it was weak and would not want to suffer the same fate as Iran. Hamas and Hizballah were direct recipients of financial assistance, training, and doctrinal support from Iran and Syria, the interruption of which would severely weaken

Figure 4. Iranian Nuclear Facilities

Arak (Khondab) heavy water plant and 25-megawatt uranium breeder reactor
Ardakan nuclear fuel site
Bushehr pressurized water reactor
Gachin and Saghand uranium mines and processing facilities
Isfahan (Esfahan) uranium conversion facility
Lashgarak unverified uranium enrichment plant in tunnels under lake
Natanz underground uranium enrichment facility; ~5,000 centrifuges
Qom recently disclosed uranium enrichment plant
Tehran 5-megawatt research breeder reactor

them. The links to the Taliban and al Qaeda, although more speculative, are not beyond reasonable belief.

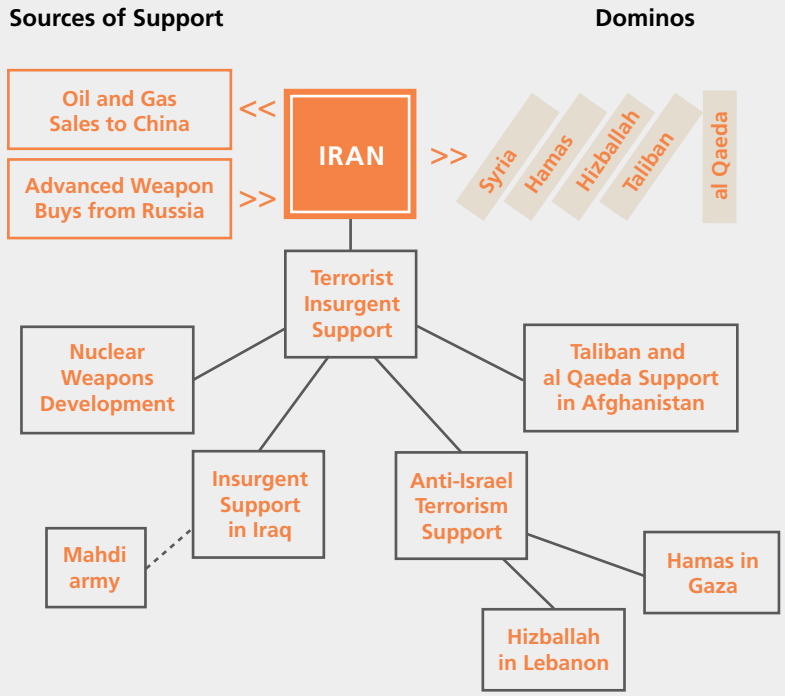
Iran was the remaining critical domino element. Iran had a nuclear weapons program, it overtly supported terrorist organizations such as Hizballah in Lebanon and Hamas in the Gaza Strip, it was a supplier of weaponry to global insurgents and the Afghan Taliban, it collaborated with another terrorist state, Syria, and it openly threatened the physical existence of Israel.

It was of course preferable that diplomatic and economic sanctions against Iran be

strengthened as the principal lever for compliance as opposed to war. Nevertheless, if severe blows had been imposed on Iran militarily, it is conjectured that dominos would have fallen, just as Libya retreated when the United States invaded Iraq.[8]

Of course, 2010 is not 2003. Even though Iran is now more of a nuclear threat than before, attack of Iranian WMD facilities by the United States under the Obama administration seems highly unlikely. For better or worse, this puts any current action in the hands of Israel. Many analysts believe that an attack by Israel on Iran's WMD facilities would have negative consequences for world peace. Additionally, in 2010, the Iranian people would probably rally to support their regime, whereas in 2003 the opposite might have occurred. The failure of the United States to act in 2003 when the political climate was permissive constitutes a substantial "opportunity cost" for the global community.

Figure 5. Iran as the Linchpin Rogue State



U.S. Army (Sean A. Terry)

Soldiers offload from CH–47 in Afghanistan, Operation *Enduring Freedom*

Strategic Consequences

The objectives of the invasion of Iraq in 2003 were to strike a significant blow against global terrorism; to end Saddam's brutal regime and bring him to justice; to find and eliminate suspected weapons of mass destruction; and to assist the Iraqi people in forming a representative government that might be a model for other nations in the Middle East. An unarticulated additional objective (but considered of high importance) was to influence other rogue regimes to mend their policies or risk suffering the same fate as Iraq.

Some of the objectives were achieved at least in part, but one was a complete failure and others were only partially successful. A scorecard is provided in figure 6, the focus being on the underlying strategic implications.

What has been achieved strategically of lasting significance? The United States came to understand that success in Iraq did not guarantee victory in the global war on terror. The best that could be hoped for was a domino effect whereby other rogue states seek accommodation rather than suffer eventual defeat. America learned how to fight 21st-century guerrilla insurgents, or more precisely, how *not* to fight them. It slowly ascertained that American-style democracy is not easily transferred elsewhere and that trying to create it in an engrained fundamentalist society has severe limitations. Nevertheless, significant strategic gains were achieved in Iraq, which now has a viable constitution that enables equitable power-sharing between Shiites,

Hamas and Hizballah were direct recipients of financial assistance, training, and doctrinal support from Iran and Syria, the interruption of which would severely weaken them

Sunni, and Kurds. The status of women in Iraq has improved. However, Iraq is a questionable model for democratic institutions in the Middle East or elsewhere.

The United States eventually learned the secret of defeating terrorist insurgents in Iraq but only after 4 years of inconclusive fighting that resulted in more than 4,200 American casualties (not to mention the larger Iraqi loss of life and destruction of infrastructure). That period of floundering almost lost the war. It now is increasingly clear that the key to 21st-century success against terrorist insurgents is empowering and motivating indigenous military and police forces to perform effectively. Enlisting the cooperation of nonextremist tribal leaders through subsidies, infrastructure improvements, and personal security appears a necessary precursor. Tribal cooperation with moderate elements was indeed a key ingredient in Iraq, even though it involved dealing with former terrorists.

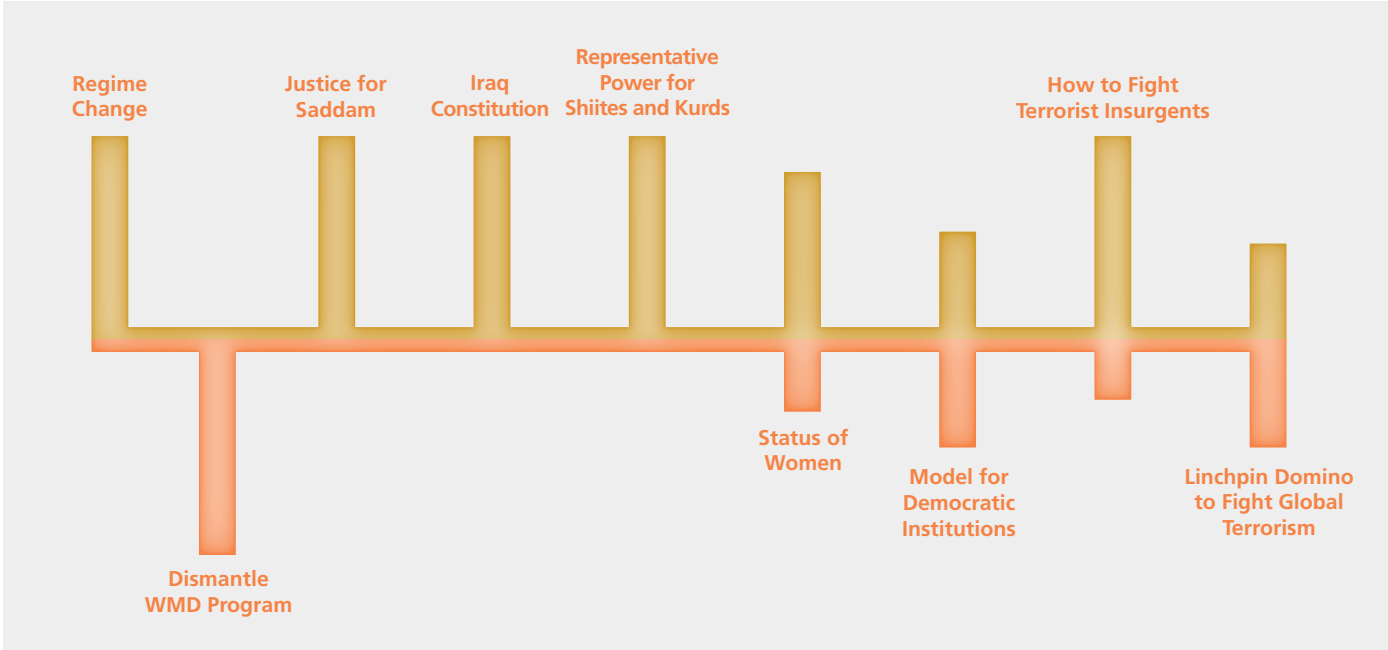
the United States eventually learned the secret of defeating terrorist insurgents in Iraq but only after 4 years of inconclusive fighting that resulted in more than 4,200 American casualties

As demonstrated by the 2007–2008 "surge," the local empowerment strategy worked. Both military and civilian casualties in Iraq have decreased significantly, government services have improved, important areas have been handed over to the Iraqi army for insurgency control, and some American surge troops are being withdrawn as excess. Unlike attrition-based criteria used unsuccessfully in Vietnam and initially in Iraq, the correct measures of excellence are reductions in violence, infrastructure improvements, and services delivered. This new paradigm for defeating guerrilla insurgents can be applied to other ongoing conflicts such as in Afghanistan. Hopefully, outreach to less extreme elements of the Taliban accompanied by a relatively small

U.S. Marine Corps (Brian L. Wickliffe)

Marines advance on Az Zubayr, Iraq, during Operation *Iraqi Freedom*

Figure 6. Strategic Scorecard for Iraq War



increase in troop levels can achieve the same success attained in Iraq.

In general, the strategic scoreboard for Iraq shows mixed results. Among the more important findings are insights about Iran, the linchpin rogue, and why and how it should have been engaged. The order of priority for engaging Iran should have been (1) diplomacy, (2) disruption of its WMD program, and (3) destabilization of the government.

As a consequence of drawn-out and inconclusive fighting, the United States eventually learned that empowerment of the Iraqi army and police, along with coopting tribal elements for support, was the winning strategy for success in that war. That was a reversal of the initial attrition-based strategy that ultimately proved unsuccessful. The new paradigm is establishing a secure environment followed by training, equipping, reinforcing, and financing the Iraqis to conduct their own counterinsurgency with support from moderate tribal elements. Afghanistan is a candidate for the same strategy.

Insights have also been gained regarding the culpability of Iran in promoting Middle Eastern terrorism. It had been hoped that the invasion of Iraq would produce a domino effect inducing rogue organizations and states such as Iran to accommodate to acceptable world standards. That happened with Libya, but unfortunately has not occurred elsewhere. It is increasingly apparent that Iran was a linchpin for bringing Syria, Hizballah, Hamas, and possibly al Qaeda to a level of better international behavior. Constrained military actions against Iran were appropriate in 2003 to cause terror dominos to fall. In the 2010 environment, for better or worse, that military option appears increasingly unlikely. **JFQ**

NOTES

[1] At that point in time, the Taliban in Afghanistan had been routed and although Osama bin Laden had not been apprehended, al Qaeda had been seriously weakened.

[2] Domino theory is most often associated with the Eisenhower administration's justification for American intervention in Indochina in 1954.

[3] U.S. Department of State Publication Office of the Coordinator for Counterterrorism, *Country Reports on Terrorism 2004*, April 2005; *Fact Sheet*, October 11, 2002.

[4] The list is not exhaustive. It does not include state sponsors such as Cuba, North Korea, Sudan, and Venezuela. Cuba and Venezuela have actively supported violent antigovernment terrorists in Colombia and elsewhere. North Korea has exported long-range missile hardware and nuclear weapons technology for more than a decade. Sudan was first labeled as a state sponsor of terrorism in 1993, but even though it continued to support Hamas, it was dropped from the United Nations terrorist list in 2001.

[5] Office of the Secretary of State Office of the Coordinator for Counterterrorism, *Patterns of Global Terrorism 2002*, April 2003; Victor Comras, "Al Qaeda Finances and Funding to Affiliated Groups," *Strategic Insights* 4, no. 1 (January 2005).

[6] In early 2003, 166 countries had issued orders freezing more than $120 million in terrorist-related financial assets. The United Nations had established a comprehensive group, the Financial Action Task Force, to deny terrorists access to the world financial system.

[7] An additional uranium enrichment facility near the city of Qom was identified in 2007 and brought to light in September 2009.

[8] In 2003, the Libyan government announced abandonment of its weapons of mass destruction programs and the payment of almost $3 billion in compensation to the families of Pan Am Flight 103. That country has since made efforts to normalize its ties with the European Union and the United States and has even coined the catchphrase, "The Libya Model," intended to show the world what can be achieved through negotiation rather than force.

Soldiers in Stryker conduct security patrol in Rawah to deter foreign fighters from crossing Syrian border into Iraq

U.S. Army (Kyle Davis)

Understanding OPCON

By CHARLES T. BERRY, JR.

Joint force commanders (JFCs) have routinely exercised authority to reorganize and break apart attached forces under the guise of operational control (OPCON). This exercise has become common practice because of misinterpretations of joint doctrine. Specifically, many officers believe that the authority to direct the internal organization of an attached force is contained within the jointly defined authorities of operational control. This belief is fallacious. Joint doctrine does *not* delineate the authority to internally organize an attached command or force as an authority inherent to OPCON.

Central to this discussion are several key terms, such as *combatant command* (COCOM), *operational control*, and *tactical control* (TACON), most of which are defined in joint doctrine and worthy of mention herein. Unfortunately, there is an additional term critical to this discussion that is not defined: *internal organization*.

COCOM, OPCON, and TACON

Combatant command is the authority vested only in combatant commanders by Section 164 of U.S. Code Title 10, or as otherwise directed by the President or Secretary of Defense.[1] Commanders with COCOM can only exercise those command functions or authorities found in Title 10, which specifically defines the command functions that COCOM includes. Moreover, joint doctrine expounds upon the code in Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*. It is also important to note that JP 1 restricts combatant commanders from transferring or delegating COCOM.

JP 1 summarizes COCOM as "the authority of a combatant commander (CCDR) to perform those functions of command over assigned forces involving organizing and employing commands and forces; assigning tasks; designating objectives; and giving authoritative direction over all aspects of military operations, joint training . . . and logistics necessary to accomplish the missions assigned to the command."[2] COCOM, as defined by JP 1, provides a broad range of command and control that appears appropriate for a commander with permanently assigned forces.

Unlike COCOM, OPCON is not legally defined in law. Instead, it is derived from the authorities of COCOM and delineated in JP 1. Logically, operational control is inherent to COCOM because it is defined as a subset of the COCOM functions (authorities) delineated in Title 10 and JP 1. OPCON provides a much more limited array of command functions than does COCOM. JP 1 states that OPCON "is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning

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tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission."[3] Operational control is the command relationship normally transferred to a gaining combatant commander when forces are attached. The rationale for this appears sound, given that the attachment of forces is a temporary transfer normally associated with the accomplishment of a specific mission and the citation above ends with "necessary to accomplish the mission."

A current example of this is the rotational deployment of I Marine Expeditionary Force units to Iraq and Afghanistan, which is facilitated by a change of operational control between U.S. Pacific Command and U.S. Central Command. Only the Secretary of Defense or President can authorize the transfer of forces and change of operational control as described.

OPCON is designed to provide commanders with the requisite authority to organize their commands, delegate the appropriate level of authority, and assign tasks to subordinate commanders as necessary to accomplish the mission

Combatant commanders cannot delegate OPCON outside of their commands, but they can delegate it within their commands. Moreover, any commander who has operational control of a force can delegate that authority *within* his command. OPCON is designed in this manner to provide commanders with the requisite authority to organize their commands, delegate the appropriate level of authority, and assign tasks to subordinate commanders as necessary to accomplish the mission. With these facts in mind, it appears that OPCON is appropriate for the temporary command and control of attached forces.

Tactical control is a subset of the authorities specified in operational control. Accordingly, TACON is inherent in OPCON and is delegable. Tactical control generally provides the commander with the authority to furnish detailed direction and control of those forces attached to him. Specifically, JP 1 states that TACON "provides sufficient authority for controlling and directing the application of force or tactical use of combat support assets within the assigned mission or task."[4] As described here, TACON provides a limited range of command and control and is normally prescribed for specific missions or tasks that forces are specifically provided for. The passage implies that the delegation of TACON is appropriate for circumstances where forces are provided for the accomplishment of a specific mission or set of tasks.

Defining Internal Organization

There is some debate over the term *internal organization*, which is used in the Basic Authority paragraph that describes OPCON in JP 1.[5] This paragraph does not define internal organization, but it does provide some context. Internal organization refers to the task organization of the attached command (or force).[6] The list of elements contained in the sentence with this term relates to the attached commands (or forces) and not to the joint force as a whole. According to the text, OPCON "does not include the authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training."[7] The nature of the elements in the list (logistics, administrative matters, discipline, and unit training) implies that internal organization refers to the task organization of the attached elements. Furthermore, the context does not limit the definition of internal organization to the reorganization of major elements, dismemberment of the unit, or reassignment of individual personnel—thus, it is reasonable to assume it *includes* all of these things because there is no supporting rationale to *exclude* them.[8]

Conversations about command relationships are sometimes littered more with popular belief than with factual (doctrinal) detail, and this is true for the topic of OPCON authorities. Many military officers believe that the delegation of operational control authorizes the gaining commander to break apart an attached force. Again, this belief is not supported by joint doctrine, which specifically states OPCON does not include "authoritative direction for . . . internal organization" of attached forces.

JP 1 does not clearly define the level of authority that includes the authoritative direction to reorganize or dismember an attached force. The authority is mentioned discursively, in two specific locations in JP 1, as an inherent authority of combatant command. The most definitive language on this issue is not found in the section covering COCOM authorities but rather is again in the Basic Authority paragraph discussed above, which states, "[t]hese elements [administration, discipline, international organization, or unit training] of COCOM *must be specifically delegated by the* [combatant commander]."[9] The emphasis implies that COCOM includes the authority to internally organize a force, and it specifies that a CCDR can delegate this authority.

With this in mind, the following excerpt, once more from the COCOM Basic Authority paragraph, is the most logical link to this authority: "COCOM provides full authority to organize and employ commands and forces as the CCDR considers necessary to accomplish assigned missions."[10] Language in JP 1 that describes this specific authority more distinctly would be useful, but as written, it is reasonable to conclude that the authority for internal organization of an attached force is inherent to COCOM, not OPCON.[11]

Common Misinterpretations

Debate on this topic normally focuses on two elements of the list of OPCON authorities, both of which are commonly misinterpreted. The first is the authority to "[p]rescribe the chain of command to the commands and forces within *the command*."[12] This authority allows the JFC to subordinate an attached command to another command within the joint force. This does not imply that the JFC can prescribe the chain of command within an attached command. Instead, it simply authorizes the commander to adjust the organizational structure of the joint force ("*the command*") by subordinating one unit/force to another. This authority allows the JFC to *modify his span of control.*

For example, a JFC has OPCON over three Army Brigade Combat Teams (BCTs) and a Marine Expeditionary Unit (MEU). The authority to prescribe the chain of command authorizes the JFC to place the MEU under the tactical control of a BCT commander. In this arrangement, the JFC has reduced his direct span of control to three elements by delegating TACON of the MEU to a BCT.[13] Without this authority, the JFC must control each attached force directly; he cannot modify his span of control.

The second—and more contentious—OPCON element is the authority to "[o]rganize subordinate commands and forces *within the command* as necessary to carry out missions assigned to *the command*."[14] The key text to highlight in this element is "within the command." The command referred to in this text is the joint force. Organization of the subordinate elements (commands and forces) within the joint force allows the JFC to modify his span of control to best support mission accomplishment. This authority is what permits a JFC to organize his subordinate elements into joint task forces (JTF), functional components, or other subelements of his choosing.

The most convincing argument is provided by identifying context. When the authorities listed in the OPCON section of chapter IV (JP 1) are viewed in isolation, the reader has no context to work with. Chapter V, "Doctrine for Joint Commands," discusses this authority in detail and references the specific authority in the subsection titled "Organizing Joint Forces." The first full sentence of this section states that a "JFC has the authority to organize assigned or attached forces with specification of OPCON to best accomplish the assigned mission based on the CONOPS."[15] Compare this with the OPCON authority in question: "Organize subordinate commands and forces within the command as necessary to carry out missions assigned to the command."

Indeed, the two sentences align, implying that the section is discussing this specific OPCON authority. The section clearly focuses on organizing assigned and/or attached forces into components (Service, functional, JTF, or some other). It does not specifically or implicitly discuss "authority to organize" in the context of internal organization.

Some will argue that the wording of JP 1 provides flexibility for interpretation. A common assertion is that the language does not specify that "the command" is the joint force. However, both uses of the term in the sentence refer to the *same* command—the joint force as a whole. "The command" referenced in the second instance is the same command (joint force) that is assigned missions that attached forces are provided for. Therefore, the JFC is authorized to organize his joint force for the purpose of facilitating mission accomplishment.

Others will postulate that the OPCON basic authority caveat regarding internal organization is a weak point in this argument, and hence joint doctrine does not specifically prohibit an internal organization of attached forces. This counter is also flawed. Joint doctrine specifically states that "authority is never absolute."[16] The authorities granted to a commander must be specified by an establishing authority, directive, or law. A commander cannot assume he has authority because it is not specifically prohibited in doctrine—just the opposite is true. This statement does not suggest that command authorities, as written, do not require interpretation. The commander must make reasonable interpretations of those authorities that are specifically delegated to him.

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It is not surprising that joint doctrine protects the integrity of attached forces within the joint force architecture. JP 1 articulates clearly that unified action is intended to "elicit the maximum contribution from each Service and Department of Defense agency and their unique but complementary capabilities."[17] Service component forces can best provide the maximum contribution to the joint force when employed as originally designed. Proper command relationships are critical to this concept. It is not coincidental that the authorities vested in operational control protect the internal organization of attached forces, given that this level of authority is routinely delegated and exercised. Contrary to popular opinion, the distinguishing difference between OPCON and TACON is not the authority to internally organize—it is much more. **JFQ**

NOTES

[1] Office of the Law Revision Counsel, Title 10 United States Code, available at <http://uscode.house.gov/download/pls/10C6.txt>.

[2] Joint Publication (JP) 1, *Doctrine of the Armed Forces of the United States* (Washington, DC: The Joint Staff, March 20, 2009), 1, IV–4.

[3] Ibid., IV–7.

[4] Ibid., IV–9.

[5] Ibid., IV–8.

[6] The terms *command* and *force* are defined in JP 1–02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: Department of Defense, April 12, 2001, as amended through October 31, 2009), and listed in the glossary (GL) of JP 1. The author uses the joint definitions in this article. Command is a "unit or units, an organization, or an area under the command of one individual. Also called CMD [command]" (JP 1, GL5). A force is an "aggregation of military personnel, weapon systems, equipment, and necessary support, or combination thereof" (JP 1, GL7).

[7] JP 1, IV–8.

[8] Of note, some units are designed or internally organized to be broken apart for employment. One example is the Marine Corps Air/Naval Gunfire Liaison Company; Force Reconnaissance units are another. Obviously, dismembering the unit is not an issue in this case because the attached force is organized for this, with a double or triple loading of officers and equipment.

[9] JP 1, IV–8, emphasis added.

[10] Ibid., IV–4.

[11] Within the first excerpt provided above, it is clear that joint doctrine does permit a combatant commander (CCDR) to delegate this element of combatant command (COCOM). However, it may be worthy of mention that CCDRs normally only exercise COCOM over assigned forces. The President or Secretary of Defense can delegate COCOM to a CCDR for attached forces, but the normal relationship for attached forces is operational control. The obvious implication is that CCDRs do not have the authority to internally organize attached forces; hence, they cannot delegate this authority to a subordinate commander.

[12] JP 1, IV–8, emphasis added.

[13] It is important to note here that a joint force commander (JFC) with tactical control (TACON) over the Marine Expeditionary Unit (MEU) could not prescribe the chain of command within the MEU. The JFC with TACON must directly exercise control above the MEU and cannot subordinate the MEU to another subordinate commander in the joint force.

[14] JP 1, IV–8, emphasis added.

[15] Ibid., V–2.

[16] Ibid., IV–1.

[17] Ibid., i.

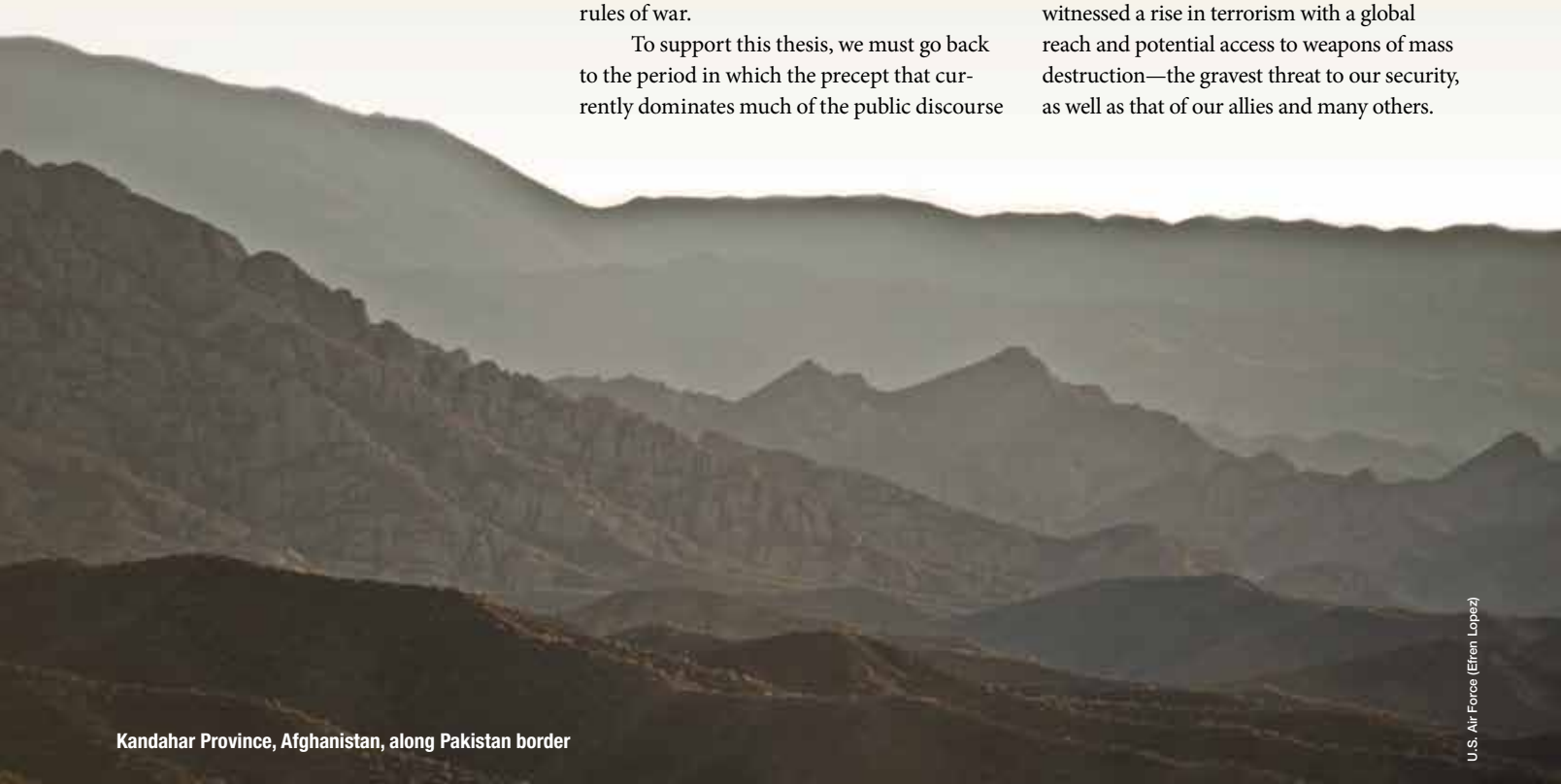
Unmanned Aircraft Systems
The Moral and Legal Case

By **AMITAI ETZIONI**

The substantial increase in the employment of unmanned aircraft systems (UAS) in Afghanistan, Pakistan, and other arenas has intensified the debate about the moral and legal nature of the targeted killing of people who are said to be civilians. As I see it, the United States and its allies can make a strong case that the main source of the problem is those who abuse their civilian status to attack truly innocent civilians and to prevent our military and other security forces from discharging their duties. In the longer run, we should work toward a new Geneva Convention, one that will define the status of so-called unlawful combatants. These people should be viewed as having forfeited most of their rights as civilians by acting in gross violation of the rights of others and of the rules of war.

To support this thesis, we must go back to the period in which the precept that currently dominates much of the public discourse on the issue at hand was forged. For generations, growing efforts had been made to limit wars to confrontations among conventional armies, sparing civilians. That is, a sharp line was drawn between soldiers (who were considered fair targets during war) and civilians (whose killing was taboo). True, these shared understandings were not always observed. Thus, during World War II, the Nazis tried to break Great Britain by bombing London, and their dive bombers attacked many other civilian centers. The Allied forces bombed Dresden, set a firestorm in Tokyo, and leveled Nagasaki and Hiroshima. However, these attacks were condemned, or at least ethically questioned, precisely on the grounds that they eroded the line that ought to separate armed forces from civilians and protect the latter.

Over the last decade, however, we have witnessed a rise in terrorism with a global reach and potential access to weapons of mass destruction—the gravest threat to our security, as well as that of our allies and many others.



Kandahar Province, Afghanistan, along Pakistan border

U.S. Air Force (Efren Lopez)

These terrorists systematically and repeatedly use their civilian status to their advantage, both to enhance their operations and to mobilize public opinion. Thus, they have used ambulances to transport suicide bombers and their bombs—and have had their allies complain when security forces started checking ambulances, causing delays in their services. Terrorists disguised themselves as civilian passengers to hijack airplanes full of innocent people, turning the planes into missiles to kill thousands working peacefully at their desks—and afterward found people who complained vociferously about the security measures that were introduced to prevent such attacks. Furthermore, terrorists stored their ammunition in mosques, mounted antiaircraft guns on top of schools and hospitals, set up their command and control centers in private homes and made them into bivouacs, and then screamed bloody murder when any of these installations were hit by our bombers, artillery, or drones. In short, we must make it much clearer that those who abuse their civilian status are a main reason for the use of UAS and targeted killing against them—rather than merely against military targets.

Another way to illustrate this key point is to conduct the following mental experiment. Take any fighting force—for instance, the Japanese military in World War II. If that force is abiding by the rules of war—wearing clear insignia identifying the troops and their encampments, and thus the government that is accountable for their actions—they can be (and were) legitimately targeted, bombed, and killed. No one raises moral or legal issues—beyond a few pacifists who would rather surrender than fight at all—even if the particular unit is not engaged in battle: it might be resting in its camp, being resupplied, or training in the hinterland. Now imagine that the same troops—performing the same military roles—take off their uniforms, put on civilians' clothing, and move into civilians' homes, community centers, and shrines. Are they no longer legitimate targets?

Unlike armchair ethicists, who write about this matter and never come closer to combat than watching a movie in a theater, I have some first-hand experience in the matter. In 1946, I was a member of the *Palmach*, a Jewish underground commando unit that pressured the British to allow Jews who escaped Nazi-ravaged Europe to settle into what would become Israel. (I say "pressured" because unlike our competitor, the *Irgun*, we fought a largely public relations war. We did so by alerting the British military to leave before we blew up the buildings that housed them—to grab headlines, not bodies.) One day, we attacked a British radar station near Haifa. A young woman and I, in civilian clothes and looking as if we were on a date, casually walked up to the radar station's fence, cut the fence, and placed a bomb. Before it exploded, we disappeared into the crowd milling around in an adjacent street. All the British could do was either indiscriminately machinegun the crowd—or let us get away. Indeed, their inability to cope with abusive civilians was one reason the British retreated from Palestine and scores of other colonial territories, the French ultimately lost the war in Algeria, the Soviet Union left Afghanistan, and the United States pulled out of Vietnam (although the North Vietnamese regular forces also played a key role).

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Does all this mean we should attack masses of civilians merely because some of them have attacked us or may be about to? Certainly not. What it does mean is that to negate the tactical advantages abusive civilians have and to minimize our casualties, we must attack them whenever we can find them, before they attack us. As we shall see shortly, UAS are a particularly well-suited means to serve this goal.

Hence, instead of apologizing each time the wrong individual is targeted or collateral damage is caused, we should stress that *the issue would be largely resolved in short order if the abusive civilians would stop their abusive practices and fight—if they must—according to established rules of war. They cannot have it both ways*—that is, violate these rules repeatedly and seek to be shielded by them. And while investigations after each incident have their place, in order to determine whether we received wrong intelligence or to further refine the decisionmaking matrix involved (more about this shortly), they should not be construed as an indication that the main source of the problem is our response to abusive civilians who attacked us.

To suggest that we need a new shared understanding, for which we must first make the moral case and then move to ensconce it in a new Geneva-like convention, is far from implausible. After all, the Geneva Conventions have been extended, revised, and augmented several times.

Air Force MQ–9 Reaper at Kandahar Airfield, Afghanistan

U.S. Air Force (Efren Lopez)

Smaller Print

In examining the arguments about the moral and legal status of using UAS (and other forms of targeted killing), I am using as my text an October 2009 article in *The New Yorker* by Jane Mayer. The article touches on all the major issues involved, albeit with a dose of liberal coloring. (The article is called "Predator War," a name that is both accurate and revealing. Mayer has previously written critically about the treatment of terror suspects in her 2008 book, whose title again speaks volumes: *The Dark Side*.)

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Pakistani Taliban commander reaffirms commitment to guerrilla warfare in South Waziristan tribal region

AP Images (Ishtiaq Mahsud)

Mayer opens her reportage with a case in point: a man is lounging on a rooftop somewhere in Pakistan. He has a bunch of visitors. He is not well; he has diabetes and a kidney disease. We even can see—thanks to a drone hovering above—his IV drip. Suddenly, poof, two missiles strike, and all we have left is a torso. Several of the visitors are also dead.

The picture changes, though, as Mayer reports that the man on the rooftop was Baitullah Mesud, a man responsible for the assassination of Benazir Bhutto, the September 2008 bombing of the Islamabad Marriott, and numerous attacks on American and coalition forces in Afghanistan. Another case Mayer points to is a 2002 killing by a UAS of a few people driving in a car deep inside Yemen. One of them, Mayer tells us, was Qaed Salim Sinan al-Harethi, an al Qaeda operative who is reported to have played a key role in the bombing of USS *Cole*. It is helpful to keep such cases in mind when one faces the questions that Mayer, speaking in effect for other skeptics of the program, raises about the use of UAS.

Are Abusive Civilians Criminals?

Some suggest that we would be better off if we dealt with abusive civilians like criminals; that is, instead of killing them, we haul them into a court of law. Of course, in numerous situations, including the two Mayer describes, such capture could not be executed or only at very great risk to our forces and to the local civilian population.

Moreover, often—say, when dealing with al Qaeda leaders and foot soldiers and others like them—security requires *preventing* attacks rather than prosecuting the perpetrators after the attack. This is particularly evident when we concern ourselves with terrorists who may acquire weapons of mass destruction. It also holds for terrorists who are willing to commit suicide during their attack and hence cannot be tried, and who will pay no mind to what might be done to them after their assault. Finally, even terrorists not bent on committing suicide attacks are often "true believers" who are prepared to proceed despite whatever punishments the legal system may throw at them. All these kinds of terrorists are best prevented from proceeding rather than vainly trying to prosecute them after the fact, and most cannot be effectively deterred by the criminal justice system.

In contrast to prevention, law enforcement often springs into action after a criminal has acted: when a body is found, a bank has been robbed, or a child has been kidnapped. By and large, the criminal law approach is retrospective rather than prospective. Law enforcement assumes that punishment after the fact serves to deter future crimes (not to eliminate them, but to keep them at a socially acceptable level). This will not do for the likes of Osama bin Laden.

This is not to say that, if captured, terrorists should not be granted basic human rights. They should not be killed when they can be safely detained and held, nor should they be subjected to torture or detained indefinitely without an institutionalized review of their status. However, they are not entitled to the full plethora of rights our citizens are entitled to; they choose to fight in a way that abuses the rules on which these rights are based.

I leave it for another day to examine the argument implied in the rules of war that both parties have the same basic moral status, and hence both must abide equally by the rules, and to examine the notion of fair play—which suggests that when we kill many of the enemy but have only few casualties of our own, there "must be" something foul in the way we fight. Suffice it to say here that those who attack us in the disguise of being civilians and who act brutally, not only toward our civilians, but also even toward their compatriots (for example, if they heed a different version of the same religion, or happen to be women, minors, or of a different color), do not have the same moral standing as our troops.

Enough Accountability?

The preceding analysis does not suggest that UAS should be used indiscriminately against anybody who may threaten our security or that of others. The statement Mayer quotes that "no tall man with a beard [that is, similar to bin Laden] is safe anywhere in Southwest Asia" is obviously false.

Indeed, the use of UAS is subject to close review. The U.S. military developed a set of criteria that must be met before a strike is authorized. The details are not publicized, but during a visit with officers of a brigade before it shipped out to Afghanistan, I was told that these criteria include the reliability of the intelligence that identified the target (in some cases, verification from two independent sources is required) and the number and status of other people in the area. The less reliable the information and the greater the potential collateral damage, the more people review the information and the higher the rank of those in the military who must approve the strike—all the way up to the Commander in Chief. Strikes also are reexamined after they occur in cases when we have erred. Thus, in effect, abusive civilians benefit from an extensive review before targeted killing takes place.

those who attack us in the disguise of being civilians and who act brutally, not only toward our civilians, but also even toward their compatriots, do not have the same moral standing as our troops

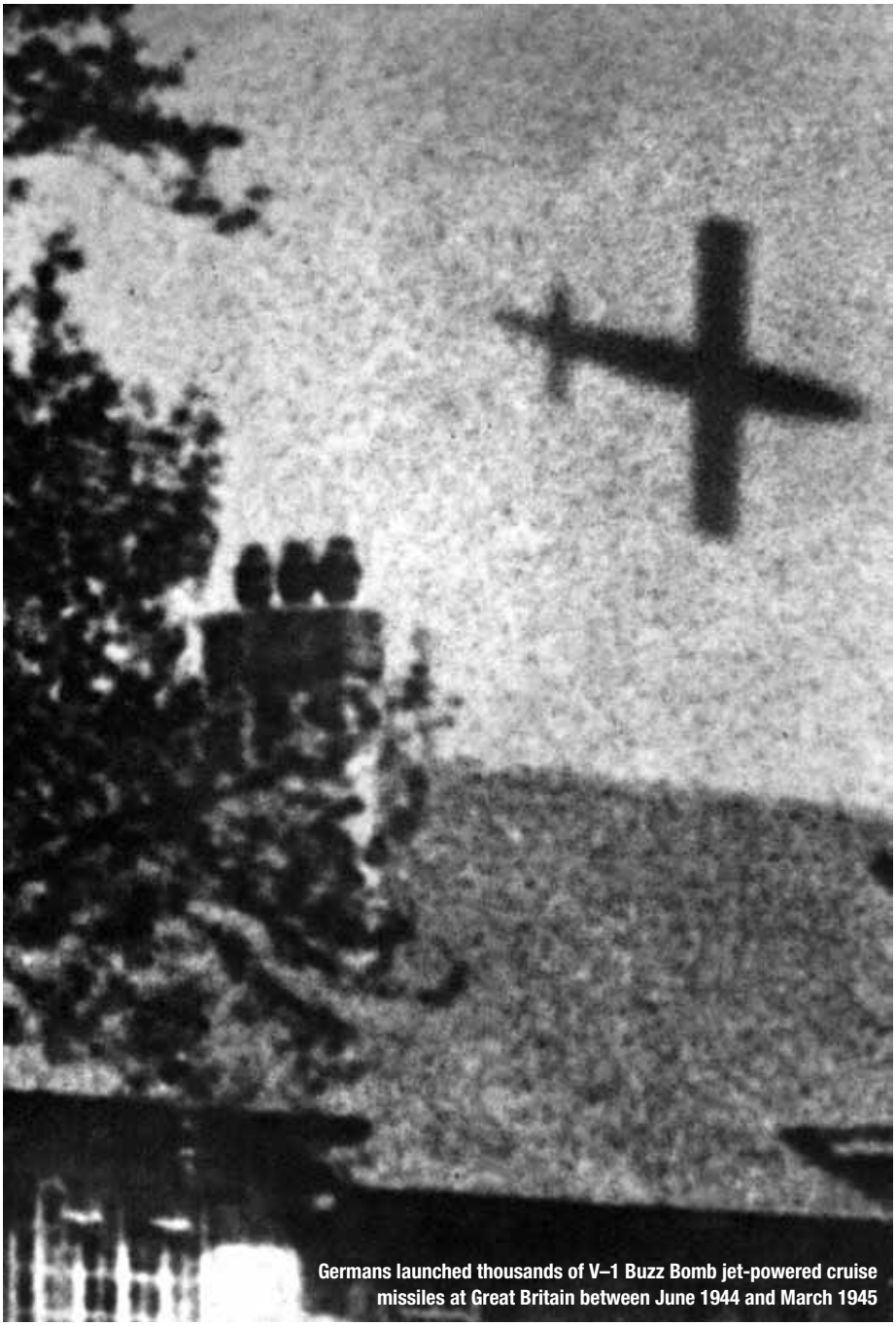
One should, though, note that just as the matrix (the decisionmaking apparatus used by the military) can be too accommodating, it can also be too restrictive. In several cases, the delay in making the decision or the strictness of the criteria employed allowed abusive civilians of considerable rank and power to escape. (Bin Laden was given the time to escape to a new location when the Pakistani government delayed giving permission for the attack on its soil in 2004.)

And, at least according to one source, after General Stanley McChrystal decided to cut back on bombing and targeted killing because of what was considered excessive collateral damage, our casualities increased. The *Washington Post* reported on September 23, 2009, that there had been "a sharp increase in U.S. troop deaths in Afghanistan at a time when senior military officials acknowledge that American Servicemembers are facing greater risks under a new strategy that emphasizes protecting Afghan civilians." The moral ground for this approach is far from self-evident. I turn below to the argument that such sacrifices will win over the population, and hence will save lives—ours and theirs—in the longer run.

What about Collateral Damage?

Even if one fully accepts that targeted killing of the leaders and maybe foot soldiers of groups such as al Qaeda is justified, one still must be concerned, for moral and prudential reasons, about collateral damage—which involves by definition innocent civilians. Here, too, one must first reiterate that the main fault lies with the abusive citizens who refuse to separate themselves from the local population. Second, to some extent collateral damage could be reduced by enabling the general population to leave an area before an attack, as the Pakistani army did in Swat Valley, or by encouraging the general population to separate itself from abusive citizens, as Israel did during the 2009 operation in Gaza.

Third, the extent of potential collateral damage is and should continue to be one criterion in the matrix of decisionmaking used by the U.S. military when UAS strikes are authorized. That is, consideration is given not only to the "values" of the target and to the reliability of information about the target, but also to the



USIA (*New York Times* Paris Bureau Collection)

Germans launched thousands of V–1 Buzz Bomb jet-powered cruise missiles at Great Britain between June 1944 and March 1945

number and kind of innocent civilians surrounding the target (children in particular).

Additionally, one should note that some of the population acts like part-time spies, intelligence agents, lookouts, and providers of services such as accommodations and medical care to the terrorists. To the extent that these services are provided voluntarily rather than coerced, the population must be warned that they will be treated the same ways as combat service support personnel who provide such services.

Last but not least, there is no reason to hold that UAS cause more collateral damage than bombing or even attacks with Special Forces or regular ones.

Are UAS Legal?

Are UAS strikes legal by our own laws? Congress has authorized the President "to use all necessary and appropriate force" against "persons he determines planned, authorized, committed, or aided" the attacks of 9/11 or who harbored such persons. The Obama administration, like its predecessor, has stated that this act of Congress grants it the legal power to authorize UAS strikes. And because the targets are engaged in combat against us, many legal experts state that the strikes are not in violation of Executive Order 12333's prohibition on assassination.

Are strikes legal according to international law? Mayer reports that:

for the U.S. government to legally target civilian terror suspects abroad it has to define a terrorist group as one engaging in armed conflict, and the use of force must be a "military necessity." There must be no reasonable alternative to killing, such as capture, and to warrant death the target must be "directly participating in hostilities." The use of force has to be considered "proportionate" to the threat. Finally, the foreign nation in which such targeted killing takes place has to give its permission.

Without going into a detailed analysis of whether the U.S. strikes in all the cases, from Pakistan to Yemen, meet all these criteria, I should point out that international law (and for that matter, domestic law) is rarely that unambiguous. Indeed, there is considerable literature on the subject, which reaches a wide range of conclusions.[1] Nor are the facts always as straightforward as one would need to meet the standards. For instance, the Pakistani government protests publicly the use of UAS, but privately provides bases for them and intelligence to identify targets. Does this mean that the foreign power did or did not give consent? And why should a government be expected to seek the consent of a nation that supports terrorism—say, if Israel targets a terrorist in Damascus, should it await the consent of Syria?

Most important, laws are not carved in stone. They are living documents. The constitutional right to privacy did not exist until 1965. Our current understanding of the First Amendment right to free speech, considered the most absolute right of them all, is an interpretation of the text fashioned in the 1920s. The Geneva Conventions were developed over decades—and thus can be further developed.

the extent of potential collateral damage is and should continue to be one criterion in the matrix of decisionmaking used by the U.S. military when UAS strikes are authorized

Do UAS Alienate Populations?

Prudential arguments against the use of UAS are that they antagonize the population, create martyrs, invite retaliatory attacks, entail the loss of moral high ground, and undermine the legitimacy of the local government (for cooperating with Americans). All this may be true, but the same holds for other means of warfare. Using bombers often generates even more collateral damage and resentment. Attacks by Special Forces are considered more alienating than strikes by

Pakistani religious group rallies against suspected U.S. drone missile strike on tribal areas

AP Images (Shakil Adil)

UAS because they entail a blatant violation of sovereignty. Nor are there necessarily fewer mistaken targets or less collateral damage when Special Forces or regular forces are used. Last but not least, important segments of the population resent the presence of foreign troops—and the governments they support—for a variety of sentimental, cultural, religious, and nationalistic reasons. No wonder that in areas and periods in which the use of UAS was scaled back, there was no noticeable change in the attitudes of the population.

Hence, the main issues are how quickly we can turn over security to native forces and the extent to which we should interfere in the way the people govern themselves—not which means of warfare we use, as long as we stay engaged. Indeed, the reason UAS have recently gained special attention is largely because of their novelty and because their employment is rapidly growing. If they were replaced tomorrow with Autonomous Rotorcraft Sniper Systems or some other new means of warfare, similar issues would be raised about those technologies.

Also, one should take into account the preferences of the American people and their allies. Using Special Forces or regular troops instead of UAS increases our casualities and tends to undermine public support for the mission. UAS contribute to staying the course as long as necessary.

In Cold Blood?

Finally, UAS are criticized on the grounds that they are manned by people sitting in air-conditioned offices in Nevada or Florida, playing around with a joystick before they go home to have dinner and coach Little League. According to Mayer, ethicist Peter W. Singer believes that the drone technology is "'seductive,' because it creates the perception that war can be 'costless.'" Moreover, the *victims* (Mayer's term) remain faceless, and the damage caused by the UAS remains unseen. Mary Dudziak of the University of Southern California's Gould School of Law opines that "[d]rones are a technological step that further isolates the American people from military action, undermining political checks on . . . endless war."

This kind of cocktail-party sociology does not stand up to minimal critical examination. Would the people of the United States, Afghanistan, and Pakistan be better off if terrorists were killed in "hot" blood—say, knifed by Special Forces, blood and brain matter splashing in their faces? Would they be better off if our troops, in order to reach the terrorists, had to go through improvised explosive devices blowing up their legs and arms and gauntlets of machinegun fire and rocket-propelled grenades, traumatic experiences that turn some of them into psychopath-like killers?

Secretary of State Clinton meets in Islamabad with tribal members angry about U.S. aerial drone attacks along Afghan border

AP Images (Irfan Mahmood)

If all or most fighting were done in a cold-blooded, push-button way, it might well have the effects Mayer suggests. However, as long as what we are talking about are a few hundred drone drivers, what they do or do not feel has no discernable effects on the nation or the leaders who declare war. Indeed, there is no evidence that the introduction of UAS (and before that, high-level bombing and cruise missiles that were criticized on the same grounds) made going to war more likely or extending it more acceptable. Anybody who followed the history of our disengagement in Vietnam after the introduction of high-level bombing, or the difficulties President Obama faced in increasing troop levels in Afghanistan in the fall of 2009—despite the recent increase in UAS use—knows better.

Moral Turning Point

As someone who lost many friends in combat and saw many wounded, and who inflicted such losses on others, I strongly abhor violence. I have written books, essays, and op-eds, testified before Congress, consulted the White House, and demonstrated in the streets to promote peaceful solutions and urge the curbing of the use of arms, from handguns to nuclear bombs.

As I see it, however, the main point of moral judgment must be faced earlier in the chain of action, well before we come to the question of which means are to be used to kill the enemy. The main turning point concerns the question of whether we should go to war at all. This is the crucial decision because once we engage in war, we must assume that there is going to be a large number of casualties on all sides and that these may well include innocent civilians. Often, discussions of targeted killings strike me as being written by people who yearn for a nice clean war, one in which only bad people will be killed using "surgical" strikes that inflict no collateral damage. Very few armed confrontations unfold in this way. Hence, when we deliberate whether or not to fight, we should assume that once we step on this train, it is very likely to carry us to places we would rather not go, but must. The UAS are a rather minor, albeit a new, stepping stone on this woeful journey. **JFQ**

NOTE

[1] See, for example, Peter M. Cullen, "The Role of Targeted Killing in the Campaign against Terror," *Joint Force Quarterly* 48 (1st Quarter 2008), 22–29; David Kretzmer, "Targeted Killing of Suspected Terrorists: Extra-Judicial Executions or Legitimate Means of Defence?" *The European Journal of International Law* 16, no. 2 (2005); and Steven R. Ratner, "Predator and Prey: Seizing and Killing Suspected Terrorists Abroad," *Journal of Political Philosophy* 15, no. 3 (2007).

Army Chief of Staff talks with military senior Service college students at Harvard University

U.S. Army (D. Myles Cullen)

BURGEONING COURSES, LAGGING STANDARDIZATION

By SYDNEY M. SAVION *and* TERRANCE J. MCCAFFREY

Since the advent of the Goldwater-Nichols Department of Defense Reorganization Act of 1986, the requirements for and approaches to joint training and education have morphed across the joint learning continuum. Goldwater-Nichols was hailed as "one of the landmark laws in American history" by then-Congressman Les Aspin. The act aimed to enhance joint operational effectiveness and spawned standards for joint officer management, joint doctrine, and joint training and education policies. To get the joint force qualified to execute these duties, individual and collective prepara-

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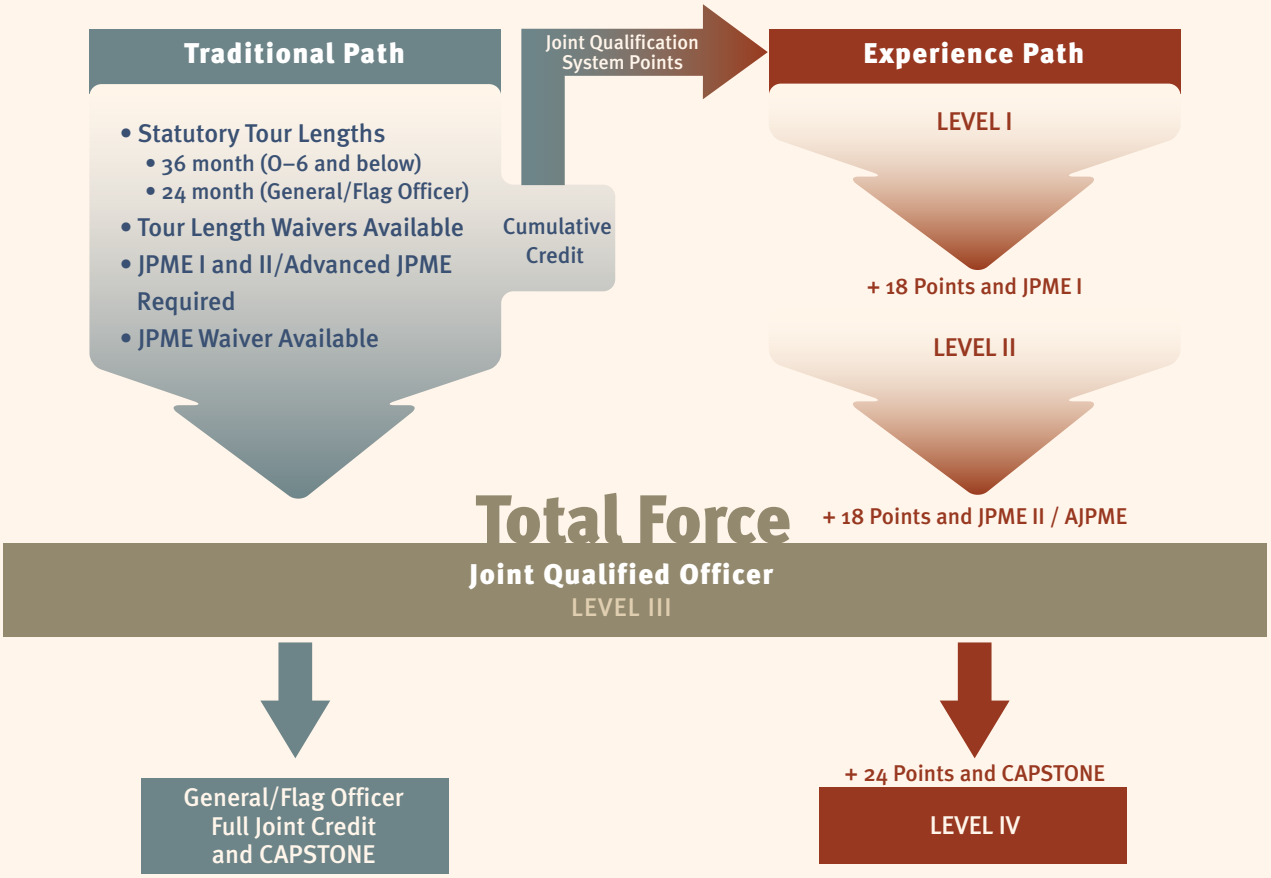
Figure. Joint Qualification Level = Joint Education + Experience Points + Other Points



tion within the joint learning continuum includes joint training, joint professional military education (JPME), joint experience, and self-development.[1]

Twenty-four years after Goldwater-Nichols, the methods to establish joint qualification are described in the Chairman of the Joint Chiefs of Staff (CJCS) Vision for Joint Officer Development, signed in November 2005, and spelled out in Department of Defense (DOD) and CJCS policy. Two policy documents that specifically influence joint education and training are the "Officer Professional Military Education Policy" (OPMEP/CJCS Instruction 1800.1D), which guides JPME, and the "Joint Training Manual" (JTM/CJCS Memorandum 3500.03B), which governs joint training. The OPMEP clearly defines standards for formal officer education in the collective JPME institutions and Service academic institutions, while the JTM lays out the framework for joint individual learning course certification as an annex. The JPME program is further guided and accredited by a well-defined Process for the Accreditation of Joint Education (PAJE), prescribed in the OPMEP and designed to provide oversight, assessment, and process improvement to the JPME institutions.

These policies served well under the rigid standards subject to the joint staff officer (JSO) program that required JPME I, JPME II, and a specified joint tour be completed before a boarding process that chose the best qualified joint officers for JSO designation. The demand for joint qualified officers (JQOs) to perform more and more joint functions, however, has caused the system to change because it was found unable to meet the needs of the warfighter.

What has emerged is the implementation of the JQO program, which replaced the JSO program stipulated by Goldwater-Nichols (see figure). This program, outlined in the 2005 CJCS Vision and corresponding policy, recognized that joint credit should be applied where jointness is experienced, opening up opportunities for joint experience credit to be gained for experiences not on the joint duty assignment list and associated points for non-JPME education and training completed. This process is codified in DOD Instruction 1300.19, "DOD Joint Officer Management Program," and CJCS Instruction 1330.05, "Joint Officer Management Program Procedures," upon legislative authority granted in the fiscal year 2007 National Defense Authorization Act (NDAA).

In this system, however, comprehensive training and education guidelines for the Joint *Individual* Learning Enterprise (JILE) level are missing. JILE is a novel term used to describe the collective of non-JPME courses that fall outside the purview of the policies prescribed for JPME. Regardless of rigor, non-JPME courses do not serve as a substitute for extant JPME I and JPME II requirements, but supplement the system and enhance individual joint portfolios, including contributions to gaining JQO Level II status.

Since the JQO system now allows for alternate paths to gain joint credit outside of the original Goldwater-Nichols path, joint

training requirements and novel joint officer development opportunities have emerged. Although many non-JPME courses existed before NDAA fiscal year 2007 provided new authority for application of courses for credit toward JQO levels, we have seen a burgeoning array of courses developed by combatant commands, Services, combat support agencies, PME/JPME institutions, and other entities targeted at meeting individual and commander needs for joint experience, training, and education in addition to the traditional JPME formal lanes. Moreover, these courses seem to satisfy ad hoc joint training requirements under well-intended but seemingly uncoordinated efforts to serve individuals in their joint professional development. The problem that stems from such activity is the *absence of standardization* across the entire JILE for the development, assessment, and certification/accreditation of these non-JPME courses.

Non-JPME Courses Defined

To understand what non-JPME courses are, we must first know what constitutes JPME. Joint professional military education is comprised of precommissioning, primary, intermediate, senior, and general officer/flag officer military educational programs that are certified or accredited under the provisions of the rigorous PAJE, which is guided by widely accepted civilian accreditation standards and practices adapted to satisfy JPME requirements.[2] It is in essence the process of assessing the quality of education including learning objectives, criteria and standards, and quality instructors. Moreover, many of the JPME institutions are accredited by civilian regional accreditation systems and grant Master's degrees upon successful completion of the course of study.

Generally, when we think of the *E* in JPME, we think of only the intermediate and senior Service school programs, as opposed to other non-JPME education and training. However, most academic courses developed invariably include elements of both training and education, given that the OPMEP states, "Training and education are not mutually exclusive. Virtually all military schools and professional development programs include elements of both education and training in their academic programs."[3] *Training* is defined as instruction and applied exercises for acquiring and retaining skills, knowledge, and attitudes required to complete tasks, and *education* conveys general bodies of knowledge and develops habits of mind applicable to a broad spectrum of endeavors.[4] Non-JPME courses are those developed outside this formal structure of the JPME system and guidelines and instead are developed under the guise of "training" under the JTM.

Added to these highlighted differences between JPME and non-JPME education are limitations on the ability to attend JPME, such as officer nonselection, career timing, and physical school throughput issues. Regardless of these real limits on the system, there is a growing demand by commanders for officers to acquire joint competence at earlier stages in their careers. There is also a desire for field grade officers to have already attended JPME and to have mastered the joint training and education milestones prior to arriving at their joint assignment because, traditionally, the only place officers acquire any significant degree of joint education is from the JPME process.[5] That said, studies suggest that the current model of when officers receive JPME may not be optimum. The bottom line is that there is a huge disparity between the analysis, design, development, implementation, evaluation, and overall quality of JPME courses and the non-JPME courses available on an ad hoc basis to the joint warfighter.

since the joint qualified officer system now allows for alternate paths to gain joint credit outside of the original Goldwater-Nichols path, joint training requirements and novel joint officer development opportunities have emerged

A related problem is that both the former JSO and current JQO programs require officers to complete JPME Phase II. Although there is no requirement for JPME II completion for most joint billets,[6] the education provided at the Joint Forces Staff College (JFSC) is specifically tailored to the needs of JSO duty. The issue is that throughput is a serious limitation since current Title 10 U.S. Code requires that JPME II be conducted *in residence*. JPME II credit can now be obtained at either at JFSC (including the Joint and Combined Warfighting School or Joint Advanced Warfare School), one of the senior-level Service colleges, the National War College, or the Industrial College of the Armed Forces. Although this list seems to offer an abundance of opportunity, the only school that services officers in the junior field grade ranks that fill many joint jobs is JFSC. The Services do a great job of filling available JFSC seats, but the physical capacity of the college or the requirements of the Services often prevents officers from attending JPME II prior to arriving at their joint duty assignments. When this does occur, commands must go without individuals for 10 weeks if they desire the officer to get the education or be eligible to fulfill JQO Level III requirements during the officer's joint tour.[7] This can happen in the middle of the joint tour, or the really inefficient timing at the end of the tour that gaps the position for the same period before an individual departs.

Given the ongoing prosecution of two wars, the current operational tempo of the Services significantly affects the availability of officers to attain JPME I or II prior to a joint assignment. Once an officer is assigned to a joint task force (JTF), it is less likely he will attain any joint skills desired through JPME, but rather will attain some level of joint education or training through on-the-job training or distance learning without necessarily gaining joint credit. This in and of itself exacerbates the dilemma for the commander. Qualified people are needed, but he cannot send them to get the requisite education and training through the traditional schoolhouse method. Moreover, the current solutions to the problem seem to be laser focused on intermediate- and senior-level education even though policies such as the OPMEP equally illuminate precommissioning and primary level JPME where many of these issues can actually gain traction. Until the timing and throughput of attending JPME schools are reconciled, officers will seek other venues for joint education or training and operational joint experience to attain the maximum number of JQO points to meet part of the criteria toward JQO status. Granted, this may not be wholly achieved without having completed the applicable level JPME, but the commander still requires individuals to be capable of operating in a joint environment regardless of their formal education.

What has become disconcerting is the discovery that the quality of many of the non-JPME courses fails to rise to the pedigree equal to or greater than those courses accessed under PAJE. This is mainly due to the fact that there is a lack of standardization

and enhanced evaluation criteria to ensure the quality of courses offered and submitted for joint certification. Additionally, many courses labeled joint have not gone through the certification process codified in CJCS Memorandum 3500.03B, nor are there plans from their sponsors to do so even though a system to certify them exists.

The process for non-JMPE courses to gain joint certification is currently captured in the JTM, Enclosure H.[8] This applies to all organizations that provide joint individual learning content. However, this process is not widely known or sufficient in depth and breadth of assessment to ensure courses are developed with the quality and standardization required of certification. Until recently, this process was comprised of five certification criteria by which a course submitted for joint certification is assessed:

- content must meet a joint training requirement
- content should not conflict with joint doctrine
- joint training objectives must link to current Universal Joint Task List (UJTL)
- media must incorporate assessment of each trainee to track achievement of the training objectives
- media must support content assessment as part of the life cycle management.[9]

With the exception of the joint doctrine and UJTL criteria, these five criteria have been the subject of extremely broad interpretation and have not significantly ensured that proper quality control is achieved. Given the increasingly complex joint operating environment, the emphasis on adaptive joint individual training and education to prepare individuals to perform duties in joint operations continues to grow. This lends even more credence to ensuring the quality and standardization of non-JPME course development and assessment.

Importance of Standardization

In a military context, Joint Publication 1–02, *DOD Dictionary of Military and Associated Terms*, defines *standardization* as:

the process by which the DOD achieves the closest practicable cooperation among the Services and DOD agencies for the most efficient use of research, development, and production resources, and agrees to adopt on the broadest possible basis the use of: a. common or compatible operational, administrative, and logistic procedures; b. common or compatible technical procedures and criteria; c. common, compatible, or interchangeable supplies, components, weapons, or equipment; and d. common or compatible tactical doctrine with corresponding organizational compatibility.[10]

Standards offer individuals who develop courses a formal convention, as well as some level of concordance with learning objectives, instruction, and evaluation. In addition, standards provide learners (that is, warfighters) quality course content that they can trust in terms of a level of standards, testing, definitions, practices, and procedures. Equally important is bridging course development with the needs of the individual learner and the requirements of the joint position itself. The skills that individuals need to execute their joint duty should be based on the requirements of their assignments and the commands' roles and responsibilities. So far, however, these requirements have not been established through individual training UJTLs or another type of system that matches skills needed to joint duty position. This would go a long way to supporting development of the right type of courses needed across the JILE.

Today, hundreds of non-JPME courses exist and many do not meet even the most basic joint criteria, though the prefix still gets assigned to the courses by the office of primary responsibility (OPR). *Joint*, in the purest sense of the definition, denotes activities, operations, organizations, and so forth, in which elements of two or more military departments participate.[11] In the context of individual joint training, joint courses should prepare individuals to perform duties in joint organizations or to operate uniquely joint systems, and ensure individuals have and are proficient in the joint competencies and skills to apply doctrine and procedures necessary to function as staff members.[12]

The goal of a JILE-wide certification program is to ensure that the training and education courses touted as joint, developed and offered by organizations within the joint training community, rise to the level of pedigree considered as equivalent in quality to courses that are reviewed under the PAJE process. The joint warfighter is relying on the institution and the OPR to ensure the integrity of the courses offered to enhance knowledge and the ability to gain JQO credit. What is lost on those developing non-JPME courses is the value to the learner, quality of the course content, and the effectiveness of the instruction whether delivered via distance learning or in traditional classrooms.

Toward Standardization

A course should be developed as a result of a joint training requirement, but it should also be focused on the desired learning outcomes for the warfighter. Moreover, as Stephen Covey purports, one should always begin with the end in mind.[13] The end result of developing and implementing a course should be evidence of a relatively permanent change in behavior for the joint warfighter who has taken a course. The learning joint warfighters received must be effectively employed in their joint assignments.

Bloom's taxonomy is a widely accepted framework for learning objectives comprised of affective, psychomotor, and cognitive domains that must be accounted for in the warfighter's learning program. In addition, standardization of how non-JPME courses are analyzed, designed, developed, implemented, and evaluated is vital. Using the appropriate taxonomy along with standardized educational methods ensures effective course development and supports the warfighter gaining/applying new knowledge, behaviors, skills, values, understanding, and syntheses of myriad data in a complex environment.

hundreds of non-JPME courses exist and many do not meet even the most basic joint criteria, though the prefix still gets assigned to the courses

Standardization serves to strengthen the knowledge and experience of the learner. Moreover, it ensures that courses developed and certified as joint result in sound and consistent levels of knowledge, and that individuals are able to perform the same types of tasks in joint and coalition task forces.

Enhanced DOD standardization sets in motion a granular framework for consistency. It should be comprised of a systematic approach that includes analysis, design, development, implementation, and evaluation.[14] Moreover, it must inculcate related doctrine and operational lessons learned and applied.

Analyzing the joint education environment would allow the OPR to identify the problem, settle on a suitable solution, isolate the joint training requirement driving course development, and identify/examine courses that may already exist to satisfy the requirement. Design would inform the intended outcome of the course and establish appropriate learning objectives. In essence, design answers what we intend the warfighters to understand or achieve through the course. Development informs the course resources, appropriate pedagogy, and requisite qualifications needed to be an instructor if one is required. Finally, implementation and evaluation provide the OPR a process by which the course is continuously validated to satisfy the joint training requirement while maintaining doctrinal currency and operational relevancy. U.S. Joint Forces Command (USJFCOM) is developing a system to assist with all of the above.

course certification is fundamental to a course becoming eligible for joint qualified officer points

Certification Process

People often use certification and accreditation interchangeably. However, in the context of joint professional development, they have different meanings. *Accreditation* is the overall formal process of evaluating JPME schools. *Certification* is a CJCS-mandated standard process to ensure individual learning courses are technically evaluated and meet documented, rigorous certification criteria throughout their lifecycle. While no method is infallible, the key is standardization in which all courses submitted are reviewed using the same criteria for assessment. Course certification is fundamental to a course becoming eligible for JQO points. Through the JTM, Enclosure H, the Chairman established guidance and standards to distinguish course content that is eligible (or not) for JQO points. CJCS has prescribed criteria that non-JPME courses (also known as individual learning courses) must satisfy for point eligibility toward JQO designation levels.

The individual joint training and education certification process goes through five steps:

1. Initiation. The joint certification process for institutional learning, distance learning, and blended learning courses begins when the OPR submits a course certification Request for Service on the Joint Investment Database.

2. Validation. A validated course certification request is where all items on the form are complete and the primary certifier's questions have been answered.

3. Course Content Review. The course is reviewed using the newly revised eight certification criteria, by cross-checking the certification request against the supporting course documents and filling out a Joint Course Certification.

4. Database Entry. The course is entered into the Joint Knowledge Services Database with certification date as "Accepted."

5. Joint Course Certification Package. The certification criteria and the findings of the certification review are documented.

Methodology of Review

Organizations requesting certification will submit documentation demonstrating qualification for joint course certification. The method of review used in the joint course certification process for new or existing training content is qualitative based on the following eight criteria, which USJFCOM submitted to the Joint Staff for approval (which it recently granted):[15]

1. Content must meet a joint training requirement that supports a joint operational need as identified in the USJFCOM Joint Training Plan, a combatant commander's joint training plan, or any other strategic authoritative joint document.

2. Content must be in accordance with current joint doctrine.

3. Learning objectives must link to current UJTLs.

4. Course must have an assessment that tests and documents learner achievement of objectives.

5. Course must have a lifecycle maintenance plan.

6. Course should support the interest of two or more military departments and be accessible to all Service personnel that meet course requirements.

7. Joint course instructors must possess relevant experience and knowledge of joint operations and/or activities related to the course.

8. Course should not duplicate existing material.

Joint course certification ensures quality, competency, and qualifications in support of preserving the joint moniker. It ensures individual learning courses are additive to an individual's capability in joint operations. It appropriately assesses courses developed as joint for JQO point eligibility qualification.

In addition to these process improvements, USJFCOM is pushing initiatives that establish new policy describing the JILE and the above processes, promoting the JILE through engagement and endorsement with the Joint Staff J7 and the JILE community at the biannual Joint Worldwide Training and Scheduling Conference, and developing a new registrar system to document individual accomplishments in fulfillment of DOD Instruction 1300.19 and CJCS Instruction 1330.05 JQO point requirements. All of these ongoing initiatives should create a standardized and certified JILE program that enhances the warfighter and allows individuals to gain quality credit toward their elected path to JQO qualification.

Implications

It is widely understood that joint doctrine consists of fundamental principles that guide the employment of U.S. forces in coordinated action toward a common objective. The purpose of joint doctrine is to enhance the operational effectiveness of U.S. forces. Joint doctrine provides the foundation for building a culture and basis for training and instructional material for professional military education.[16] Establishing guideposts for the quality expected of JILE course content ensures courses are developed giving the full range of consideration for incorporating joint doctrine, validated concepts, lessons learned, and best practices currently in the field. Without consistent standards consistently applied across the JILE, we leave a gaping hole in the development of officers, decreasing our joint force capabilities and our advantage over the adversary.

Courses developed for the individual learner also must possess an operational application for the joint and coalition task force. The implication of a course's operation application weighs greatly on the outcome of achieving engagement and military objectives. This is vital given that we are faced with ever more complex environments and adaptive adversaries. Training and education should be developed with

the highest standards to ensure that joint warfighters are wholly prepared to execute and operate across the spectrum of joint operations. As Joint Publication 1, *Doctrine for the Armed Forces of the United States*, is in revision and there is a new proposal for joint doctrine development to codify the joint officer development program, the time to define the context and programs that make it happen is now.

A benefit of non-JPME courses is access. Not all officers will be able to attend in-residence JPME due to nonselection, timing, or operational tempo. Non-JPME courses do not serve as a substitute for extant JPME I and JPME II requirements. However, they offer individuals the flexibility of choosing varied modes of pedagogy (online, classroom, virtual) to gain specific knowledge ensuring effectiveness in the joint operating environment. Individual learning courses also offer varied accessibility to individuals who may not otherwise be able to attain the training due to lack of proximity or other obstacles.

Non-JPME courses are an integral element of our current and future readiness, but their value added can only be as good as the content. While USJFCOM has made great strides in cataloguing and certifying many courses as joint, the command is in the process of refining joint individual training standards and processes to improve the rigor and quality of the non-JPME courses developed. The net effect of this USJFCOM initiative will be an expanded capability to certify a wider array of quality courses as joint and to ensure the course development and certification process is more standardized. Joint certified courses will be eligible for points toward designation as joint qualified officers. The end result is to make an enduring difference in the quality of the course content, to increase the value of learning and availability to the joint warfighter, and to preserve the "joint" prefix for those courses that rise to the level of pedigree deserving of its use. **JFQ**

NOTES

[1] See Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3500.01E, "Joint Training Policy and Guidance for the Armed Forces of the United States," Enclosure A, "Introduction" (May 31, 2007), A3.

[2] CJCSI 1800.01D, "Officer Professional Military Education Policy (OPMEP)," Enclosure F, "Process for Accreditation of Joint Education (PAJE)" (July 15, 2009), F1.

[3] CJCSI 1800.01D, Enclosure A, "Officer Professional Military Education Policy" (July 15, 2009), A2.

[4] See CJCSI 3500.01E, A3.

[5] A. Kent Schweikert, "Joint Professional Military Education: Timing Is Everything, Getting the Commander What He Needs" (Thesis, Naval War College, 2004).

[6] JPME II completion is a requirement, however, for JQO Level III designation, which is required for promotion to general/flag rank or to fill "joint critical" billets.

[7] Ibid.

[8] Ibid.

[9] See CJCS Memorandum (CJCSM) 3500.03B, "Joint Training Manual for the Armed Forces of the United States," Enclosure H, "Joint Individual Learning Content Certification Process" (August 31, 2007), H3.

[10] See Joint Publication (JP) 1–02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, October 17, 2008), 517.

[11] Ibid., 285.

[12] See CJCSM 3500.03B, Enclosure G, "Individual, Staff, and Collective Joint Training" (August 31, 2007).

[13] Stephen R. Covey, *Seven Habits of Highly Effective People: Restoring the Character* (New York: Simon and Schuster, 1989).

[14] See *Department of Defense Handbook: Instructional Systems Development/Systems Approach to Training and Education* (Part 2 of 5 Parts), MIL–HDBK–29612–2A, August 31, 2001.

[15] See Director, Joint Staff Memorandum 30603–09, "Joint Individual Learning Certification Criteria" (October 19, 2009).

[16] See CJCSI 5120.02A, "Joint Doctrine Development System" (March 31, 2007).

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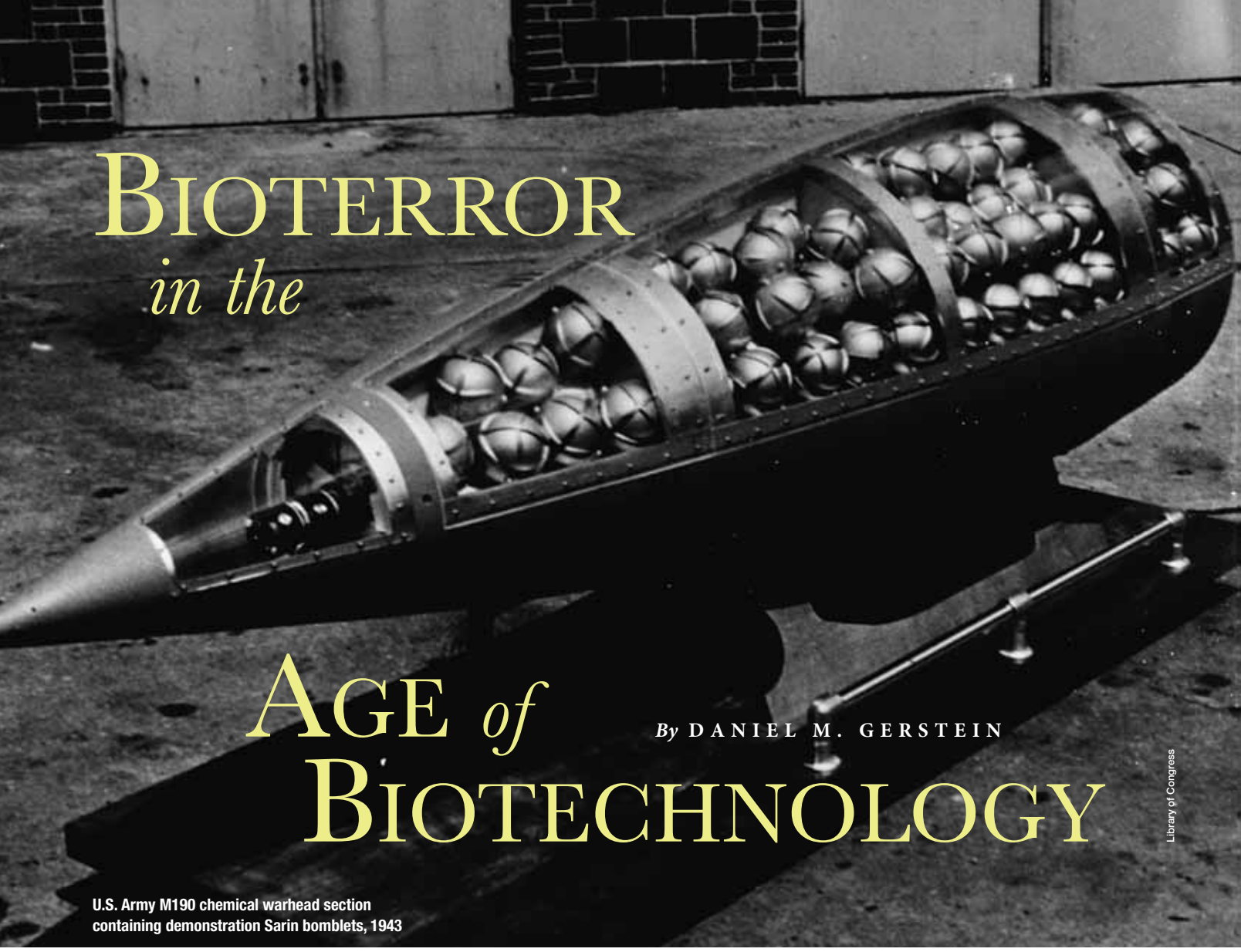
Bioterror *in the* Age *of* Biotechnology

By DANIEL M. GERSTEIN



U.S. Army M190 chemical warhead section containing demonstration Sarin bomblets, 1943

Library of Congress

The Commission believes that unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013.

The Commission further believes that terrorists are more likely to be able to obtain and use a biological weapon than a nuclear weapon. The Commission believes that the U.S. government needs to move more aggressively to limit the proliferation of biological weapons and reduce the prospect of a bioterror attack.[1]

This powerful statement from the most recent Commission on the Prevention of Weapons of Mass Destruction (WMD) Proliferation and Terrorism serves as ample warning of the dire threats faced by the United States and indeed the world from a bioweapon successfully deployed by a determined and knowledgeable terrorist. In thinking about the potential for such a bioterror attack, several important questions serve to frame the discussion. Do terrorists have the desire to employ WMD, and in particular biological weapons? Under what conditions might biological weapons be an attractive choice for use by terrorists? Would they have the requisite knowledge, equipment, and organizational capacity to mount a biological warfare (BW) attack? Would they be successful in such an

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attack? What could we do to mitigate the effects of a bioterror attack?

This article provides a framework for understanding the potential for a BW attack now and in the future by a terrorist or terrorist organization. In developing this framework, the findings hinge less on the technical capabilities than on the intentions of the potential perpetrator. State use of biological weapons in either large-scale strategic scenarios or as tools of assassination is not examined directly, although the framework could have equal application to a state BW program.

The Potential Perpetrator

Terrorism is a term that evokes strong emotions. Events of 9/11 brought terrorism to the forefront of the national security debate in the United States and arguably throughout the rest of the world. Despite this increased attention during the intervening period, the debate has seen little increased clarity.

No agreed definition of *terrorist* has been developed, and the word has been used seemingly interchangeably with other terms such as *insurgent*, *illegal combatant*, and *freedom fighter*. The result is a politicization of the term that hinders global cooperation and confuses the issue. This can be seen in a discussion of the rationality of the terrorist. Many believe that terrorists are pathologically damaged, violent sociopaths who employ violence for their own perverted outcomes. Others believe that terrorists are calculating and highly rational actors with real or perceived grievances, employing a range of strategies from political actions to violence in order to achieve desired outcomes. Some have gone as far as to suggest that it is possible to reach a negotiated settlement with terrorists, in the same way that one might reach a postconflict settlement following a state-to-state conflict.[2]

Regardless of the exact definition or the rationality of the terrorist, several important trends serve as the foundation for this analysis. First, terrorism is not a new phenomenon and has a long historical precedence. The direct origin of the term can be traced to the time of the French Revolution, although the period beginning in the 1970s is of the most interest for our discussion. It is during this period—with emphasis on the post-9/11 period—where we see the confluence of the use of high violence strategies, the rise of global terrorist organizations fueled by globalization, and increasing religious radicalization.[3]

Second, terrorists are continually searching for new means to facilitate increasingly violent and spectacular attacks that will gain visibility for and further their causes. Attacks have become more frequent and more violent. Prior to the Embassy bombings in Kenya and Tanzania in the late 1990s, for instance, global casualties from terrorist attacks were fewer than 500 per year.[4] The Embassy bombings caused casualties in the thousands, and then the attacks of 9/11 caused over 3,000 deaths with many more injured. In compiling terrorism trends for 2008, the National Counterterrorism Center (NCTC) identified 11,770 attacks that killed 15,765 (see figure 1).[5] A note of caution is in order for the reader who might want to directly compare the casualty figures. The different counting rules and definitions certainly contribute to some of the disparities noted. Additionally, the NCTC data include attacks in Iraq and Afghanistan, which some might consider related to an insurgency rather than terrorist action. Still, the increases in violence and number of attacks are worth considering. A statement by noted terrorism expert Brian Jenkins summarizes the trends in terrorism:

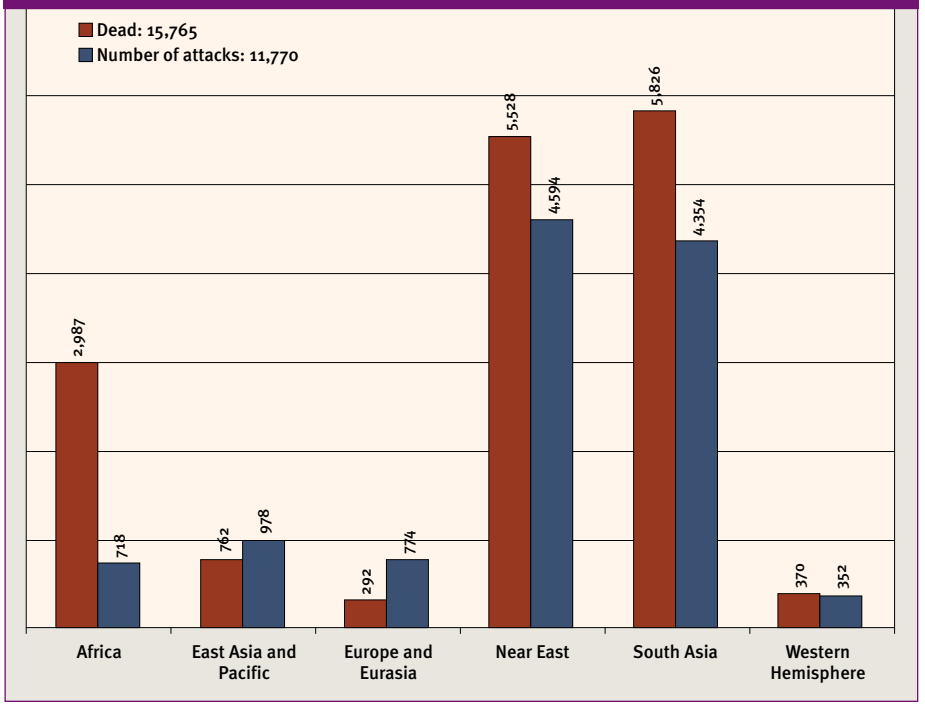
no agreed definition of terrorist has been developed, and the word has been used seemingly interchangeably with other terms such as insurgent, illegal combatant, and freedom fighter

Over the past three decades, terrorists have multiplied the number of their victims by an order of magnitude every 15 years. In the 1970s, the bloodiest incidents involved tens of fatalities. By the 1990s, hundreds were killed and the incidents increased. In 2001, the number reached the thousands, and today we fear scenarios in which tens of thousands might die.[6]

Third, general agreement now exists that terrorists are "rational" actors. Their actions may not be understood by their victims or the governments and law enforcement agencies that attempt to deal with these threats, but they are far from random irrational acts. One noted expert identifies alienation, humiliation, demographics, history, and territory as grievances that motivate terrorists.[7]

Fourth, and related to their rational actor status, terrorists have constituencies they must satisfy. High violence strategies that indiscriminately kill and maim large numbers of people are not desirable as a long-term tactic. Likewise, failure to adequately gain visibility and promote a cause will likely be seen as ineffective by these constituencies. This

Figure 1. Terrorism Statistics (2008), National Counterterrorism Center



will serve as both a motivating influence and a moderating factor that will feature prominently into the bioterror question.

Fifth, the question of whether a terrorist will employ a unique means such as biological weapons is directly related to the ability to develop the capabilities, intentions, and knowledge necessary for perpetrating a bioterror attack. Some terrorist groups will likely find it outside of their operational envelope to employ such a technique. Others may find development of these capabilities too technically challenging. Still others may determine that use of these weapons may present an existential threat to the terrorist should the attacked nation employ a massive retaliatory effort (assuming, of course, that the perpetrators can be identified).

Finally, terrorism today does not represent an existential threat to the United States or our friends and allies. However, this could change should terrorists develop or acquire the capability for conducting a WMD attack using either nuclear or biological weapons. In a harbinger of what the future might hold, Bruce Hoffman noted ominously that "many of the constraints (both self-imposed and technical) which previously limited terrorist use of WMD are eroding."[8]

What Is Biological Warfare?

Biological warfare is the intentional use of microbes to cause disease in a target population. Microbes are inherent in all life forms and include bacteria, viruses, protozoa, algae, and fungi. While some microbes are responsible for causing disease, many others serve vital functions for supporting all forms of plant and animal life. In BW, the attempt is to effectively and efficiently deploy weapons composed of biological material to attack a target and achieve a desired objective.

whether a terrorist will employ a unique means such as biological weapons is directly related to the ability to develop the capabilities, intentions, and knowledge necessary for perpetrating a bioterror attack

The use of biological weapons is not a new tactic and in fact predates the understanding of disease. The history of biological warfare can be traced back to medieval times including the siege of Caffa on the Crimean Peninsula, the use of blood-laced arrows against enemies, and the catapulting of human and animal carcasses into enemy encampments and fortifications during the Crusades.

The modern history of biological weapons includes programs by some 20 states beginning in the 1940s to the present. Often-cited efforts include the Japanese use of BW against China and captured prisoners in the World War II period; the massive Soviet program that continued through the end of the Cold War; and the programs and cooperation among Canada, the United Kingdom, and the United States that began in the 1940s and continued until the United States unilaterally denounced biological weapons and toxins in 1969. The modern history of BW also includes the Biological Weapons Convention (BWC), which was the first arms control treaty that banned the use of an entire class of weapons for offensive purposes. Also part of

9/11 brought terrorism to forefront of national security debate

U.S. Air Force (Michelle Leonard)

this history is the limited success the BWC has had with regard to halting the development of offensive BW capabilities by some of the convention's signatory nations.

The history of bioterror incidents is also instructive. One study concluded that from 1900 to 2003, there were only 77 total incidents. The data do not encompass state-sponsored BW or hoaxes.[9] The hoaxes in particular would include a large number of "incidents" as they tend to outnumber actual events by as much as 100 to 1.[10] The small number of incidents and the uniqueness of each limit the ability to draw definitive conclusions from the data. Instead, each requires analysis to determine the key parameters and outcomes that defined it and ultimately the success or failure of the attack. An important note is that during combat operations in Afghanistan in 2001, documents were seized indicating al Qaeda's interest in developing a BW capability; few details have emerged concerning the intended purpose of the weapons or how far their developmental effort have progressed.

In understanding BW, several factors contribute directly to the ability to develop and employ an effective biological weapon, including the agent or pathogen, deployment method, formulation, manufacturing process, and meteorological and terrain conditions.[11]

It is instructive in understanding the potential for a bioterror attack to appreciate the choices that must be made. Will the agent be a bacteria, virus, or toxin? Should a contagious or noncontagious pathogen be selected? Should a lethal or an incapacitating agent be used? These initial decisions begin to determine the type of attack that will be possible and even the manner in which it should be conducted.

In examining the deployment method, will the agent be delivered by aerosol, vector, food, or water? Will the pathogen be delivered using an explosive device or a spray nozzle? The formulation of the pathogen is also important. Will a wet or dry agent be used? Will the material be stabilized to make it more efficient and able to remain airborne for a longer period? What is the manufacturing process? How and in what quantities will the material be grown to mount an attack against the envisioned target? Will the material be dried and milled? What size are the particles? Do they support efficient respiratory infection or are they too large to be inhaled and remain deeply embedded in the alveoli within the lungs?

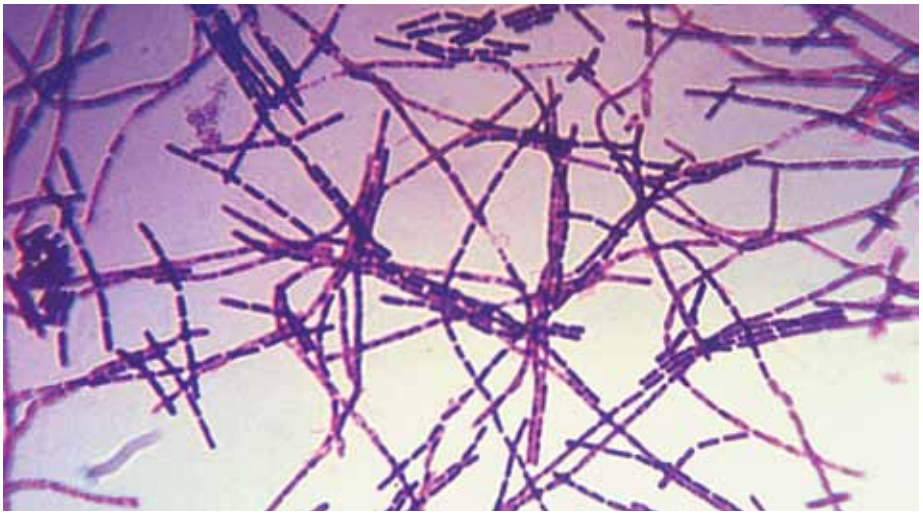
Even once the initial agent, deployment method, formulation, and manufacturing process have been determined, success in the attack ultimately depends on the meteorological conditions when the weapon is deployed. What is the wind speed? Will the weapon be deployed in a city or open terrain? What time of day? Is there an inversion that would keep the agent on the ground and therefore be more effective against the intended target?

These questions relate to the potential effectiveness of the biological weapon; however, another set of considerations is directly related to the effectiveness of the attack. They include the concentration, dose, stability, and target susceptibility. In considering these factors, the goal of the bioweaponeer is to have the highest concentration of organisms per milliliter or gram (depending on whether a liquid or dry formulation is used) of material. Another consideration is the lethal dose (LD) or infective dose (ID), which is normally measured in LD_{50} and ID_{50}, respectively, and relates to the dose required to cause mortality or infection in 50 percent of the people exposed. This becomes a major factor in considering the agent for weaponization. Consider that for the disease tularemia, the LD_{50} is approximately 50 organisms, while for anthrax it is approximately 8,000 spores. However, there are always tradeoffs to be made. *Francisella tularensis*, the organism responsible for tularemia, is highly susceptible to the environment and experiences biological decay at a rate of 2.5 to 5 percent per minute (depending on meteorological conditions and the weaponization of the pathogen), while *Bacillus anthracis*, the anthrax organism, is a hearty spore that experiences virtually no biological decay.

once the initial agent, deployment method, formulation, and manufacturing process have been determined, success in the attack ultimately depends on the meteorological conditions when the weapon is deployed

The final consideration of target susceptibility is another important factor. Ultimately, the success of an attack will be determined by whether the deployed BW weapon will infect the target population in the appropriate manner to cause disease. If the target population has been vaccinated or is not susceptible to the weapon or if protective measures have been taken, the attack will fail. For example, if an anthrax attack against troops is initiated, but the soldiers all have personal protective equipment and have been vaccinated against the pathogen, the attack most likely will not be successful.

An important note is in order at this point. When terms such as LD_{50} and ID_{50} are used, they normally are based on what the medical and public health community knows about the effect of the naturally occurring strains of the bacteria and viruses. But what if the biological material has been altered such that fewer particles cause disease or the virulence of the material reduces the incubation time? This would be the likely goal of a bioweaponeer.



Centers for Disease Control and Prevention

Photomicrograph of *Bacillus anthracis* bacteria

This previous set of questions contains a mix of operational and technical issues that the bioterrorist would need to master for a successful attack. It also serves as fodder for those who claim that developing a BW capacity is a nontrivial task too difficult for a terrorist to master. But what are the *facts*?

Dual-use Technologies

Central to the question of the potential for a bioterror attack is the ability of the terrorist to develop a viable BW capability, implying mastery of the biology, the technology for dispersing the pathogen, and the development of a scenario aligned with the objectives sought.

Some believe that the technology is too sophisticated for mastery by a terrorist and that specialized capabilities are required. Advocates of this position state that other terrorists such as Aum Shinrikyo and the Rajneeshee cult failed to acquire, process, weaponize, and successfully deploy a biological weapon. In another example, a postdoctoral student was given a year to develop this scenario using the pathogen *Francisella tularensis*. At the end of that period, when the results were briefed, the student had made three fatal errors that would have doomed the effort and prevented a successful attack.[12] In yet another anecdote that alludes to the difficulties of developing a biological weapons capability, Jerzy Mierzejewski, the retired director of the Polish biological defense laboratories who spent his career working with *Clostridium botulinum*, lamented that "one culture cycle would produce toxin that was lethal and a few months later the next would not, and so on over the years."[13]

one study concluded that capabilities in several key technologies are experiencing a doubling every 6 months—a 400 percent increase per year

Others argue that the development of biological weapons is almost trivial. One author wrote that producing biological weapons was "about as complicated as manufacturing beer and less dangerous than refining heroin." In seminar presentations a few years ago, former Central Intelligence Agency Director James Woolsey claimed that "a B-plus high school chemistry student" could produce biological agents, and at a January 2000 meeting he described producing biological agents as being "about as difficult as producing beer." In her book *The Ultimate Terrorist*, Jessica Stern quotes Kathleen Bailey who, after interviewing professors, graduate students, and pharmaceutical manufacturers, concluded that several biologists with only $10,000 worth of equipment could produce a significant quantity of biological agent.[14] In fact, the U.S. Government conducted an experiment in which a small team of experts was tasked with determining the feasibility of developing an "anthrax" weapon using readily available capabilities and equipment. The initiative—Project Bacchus—was sponsored by the Defense Threat Reduction Agency (DTRA) and demonstrated that the development of these capabilities is not particularly complex or costly.[15]

Does this important issue really come down to a question of whom one believes? Other insights can be gleaned from examining the trends in biotechnology that are placing ever increasing knowledge and capabilities in the hands of more people around the globe, undoubtedly including some who would use the technology for other than noble purposes.

Members of Georgia National Guard CBRNE response force conduct search, extraction, and decontamination drills

U.S. Air Force (Dennis J. Henry, Jr.)

In fact, many believe that we have entered the Age of Biotechnology. On the face of it, such a statement means little without further examining the likely impact for key technologies that could be used for the benefit of humankind or just as readily turned into deadly weapons of mass destruction.

One study conducted by the Department of Defense (DOD) concluded that capabilities in several key technologies are experiencing a doubling every 6 months—a 400 percent increase per year. Areas experiencing such increases include cell growth chambers and fermenters, encapsulization and stabilization, the human genome, pathogen efficacy, DNA engineering, sensors, vaccines and antibiotics, and nucleic acid synthesis.[16]

By way of an example, the rate of vaccine development doubled every 5 years from 1940 to 1970. From 1970 to 1980, the rate increased fivefold such that the time to double the capabilities in the field of vaccines was 1 year. Over the next 20-year period from 1980 to 2000, the time to double in capability decreased to 6 months. Another field, DNA engineering, not even in existence until 1982, has doubled in capacity every 6 months since. This area is critically important to a variety of biotechnical advances including gene therapy, vaccine development, and sensors, as well as the potential of ominously increasing the virulence of a pathogen. The same is true for encapsulization and stabilization, which have potential for enhancing personal protection and therapeutics as well as making BW weapons more effective and stable in the environment.[17]

As an example of what the future might hold, a recent article discusses the development of an artificial polio virus synthesized with nonliving components combined using specialized equipment and chemicals.[18] While this early work provides a proof of concept, genetic engineering and combinatorial chemistry in the future will allow for large-scale, rapid synthesizing of peptides, polynucleotides, and other low weight molecular material, allowing for manipulation of the very building blocks of life. The polio virus, with its relatively simple structure and 8,000 base pairs in its genomic sequence, provides a glimpse into the possibilities as well as highlighting the potential for the development of, for instance, the smallpox virus in this manner. Artificial development of the smallpox virus, with 200,000 base pairs and a considerably more complex structure, in this manner remains out of reach for the moment, but the Age of Biotechnology will likely make this development possible in the future. Couple this with the ready availability of the genomic sequences from a wide variety of disease-causing pathogens and organisms, and one can easily predict the potential for artificially developing pathogens, manipulating current pathogens to make them more virulent, or perhaps developing antibiotic-/antiviral-resistant pathogens.

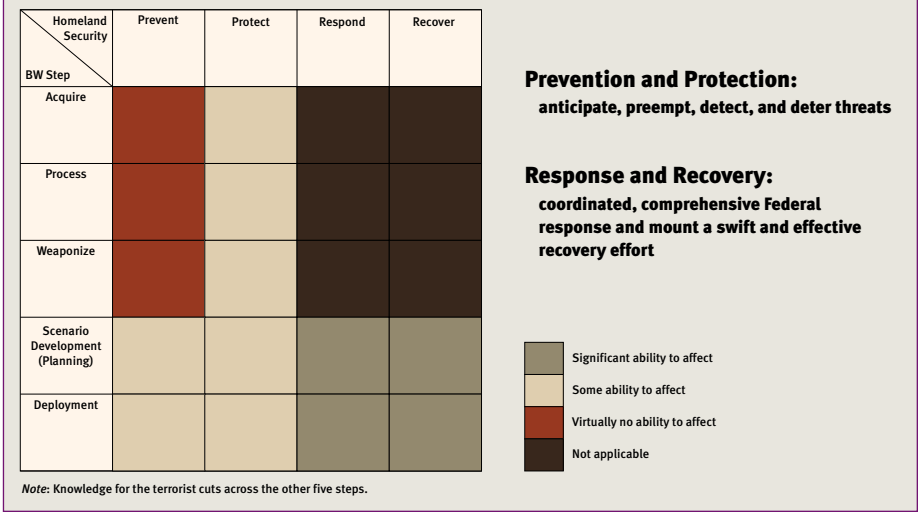
Attempts to control or limit advances in biotechnology seem fruitless with an industry that has such potential for improving the quality of life and that comprises such a large part of the U.S. and global economies. Additionally, the dual-use nature of biotechnology—that is, the very capabilities that allow for developing prophylaxes and treatments and can be employed just as effectively for developing biological weapons—results in a conundrum that we cannot fail to recognize.

Framework for Analysis

Successful employment of a bioterror weapon implies that a lone terrorist or terrorist organization has mastered five steps: acquire, process, and weaponize a pathogen, and plan the attack and deploy the weapon so as to cause disease in a target population. However successful, employment of a bioterror weapon should not be considered in isolation, but rather should be thought of as a two-sided proposition where our capabilities in preparedness and response as articulated in the Department of Homeland Security's doctrine of prevent, protect, respond, and recovery interact to either facilitate or hinder the terrorists' capabilities in varying degrees across each of the five steps. This framework forms a matrix that allows us to consider this two-sided equation in detail (see figure 2). For our purposes, the matrix has been color-coded to reflect our ability to affect each of the bioterrorist's necessary steps. A useful exercise is to look at the matrix in greater detail to gain an understanding of the potential for a bioterror incident and our ability to positively affect outcomes.

Our ability to prevent a terrorist from acquiring, processing, and weaponizing biological material is limited. Deadly pathogens are naturally occurring, and with the proliferation in the life sciences of knowledge, equipment, and capabilities, these collective steps have experienced a lowering of thresholds that allows for more biotechnology in the hands of a larger number of people, some of whom may desire to employ these capabilities as weapons. Equipment for fermentation, freeze drying, and milling—which can be found readily in local hardware stores or ordered from the comfort of one's home—allows for developing and weaponizing these biological capabilities. This is not to say that all pathogens will be available to all terrorists. International efforts to prevent biological proliferation activities such as the Australia Group and the Proliferation Security Initiative have limited effectiveness given that pathogens are naturally occurring and that the equipment requirements for processing pathogens are not particularly sophisticated. Some will prove to be too difficult or dangerous to work with; however, a determined terrorist hoping to develop a basic BW capability would see thresholds lowered. In short, biological material suitable for use in an attack has become less technically

Figure 2. Bioterror's Two-sided Equation



Note: Knowledge for the terrorist cuts across the other five steps.

challenging and therefore made these biological capabilities more readily available.

Impacting the terrorists' ability to acquire, process, and weaponize a pathogen is also limited by the modest requirements for developing a BW capability. Unlike nuclear weapons that have a requirement for highly specialized equipment and radioactive material with a large footprint and distinctive signature, BW weapons can be constructed in a small, confined space with little need for complex equipment and no discernible signature. In fact, the DTRA study conducted as part of Project Bacchus established this clearly.

terrorists desiring to acquire, process, and weaponize a pathogen such as anthrax would likely be deterred if they intended to employ the BW weapon against a population that had been fully immunized

We do have some ability to prevent terrorists from successfully planning and deploying such weapons. For example, buildings can be designed to prevent employment of biological weapons in certain scenarios. Standoff distances and limiting access to air intake systems will limit use of biological weapons against these types of hardened targets.

In the category of protection, we do have greater ability to affect outcomes. Terrorists desiring to acquire, process, and weaponize a pathogen such as anthrax would likely be deterred from doing so if they intended to employ the BW weapon against a population that had been fully immunized against the pathogen. Development of vaccines and therapeutics can have an important deterrent effect as well. Likewise, conducting an attack against a building that has defensive measures built into the air handling system would probably not result in a successful attack and therefore would also serve as a deterrence measure.

Developing and fielding new real-time sensors that provide a detect-to-warn capability will also be important. Today, the current suite of sensors, such as those in the BioWatch[19] program, are detect-to-treat with relatively long periods between exposure and establishing that an attack has occurred. This period may be as long as a day or more. In the future, new age biotechnological capabilities should begin to allow for real-time detection that will permit warning of the attack as it is occurring so people can be moved out of the attack area and begin receiving immediate treatment, and potential victims can be prevented from entering contaminated areas.

Protection also implies the employment of risk-based strategies to determine where attacks are most likely, and the deployment of deterrence and countermeasures to ensure adequate coverage of important locations and facilities.

Marines prepare samples in simulated chemical lab during Chemical Biological Incident Response Force demonstration

U.S. Marine Corps (Leslie Palmer)

Examining the last two categories, respond and recover, we reach two important conclusions. First, these actions have no applicability to the terrorists' ability to acquire, process, or weaponize a biological weapon. Second, these areas offer the greatest potential for us to affect outcomes with well considered and emplaced programs.

Response begins with the ability to sense that an attack is in progress or has occurred. It is related to our sensor technology as part of the BioWatch program, but also includes improved biosurveillance, stockpiling of critical treatments and vaccines, increased resilience in the health care system to handle surge requirements envisioned from a bioterror attack, and trained and ready first responders. The BioSense[20] and BioShield[21] programs are a start at improving biosurveillance and stockpiling, respectively, but more can and must be done.

The readiness of our public health community and first responders is also a vital link in this system. Homeland Security Presidential Directive 21, "Public Health and Medical Preparedness," of October 2007 identified the four most critical components of public health and medical preparedness as biosurveillance, countermeasure distribution, mass casualty care, and community resilience.[22]

Today, we have no national biosurveillance system. Rather, we have a collection of state and local systems that have been cobbled together and that continue to rely on the capabilities of astute clinicians, doctors, and public health personnel. The picture is even worse globally as much of the reporting is spotty and incomplete at best, and even subject to politicization. Certainly, we have the technical capability to develop an automated disease tracking system linked to hospitals, clinics, and public health facilities. Perhaps the more relevant question is whether we have the political will. On a positive note, the World Health Organization International Health Regulations that establish requirements for global disease reporting by 2012 represent an important step in global biosurveillance.

Just as advances in biotechnology allow for the proliferation of increasingly dangerous dual-use capabilities, they also provide a greater capacity to develop new age treatments and prophylaxes. In the future, developing technologies such as DNA engineering and combinatorial chemistry combined with emerg-

ing technology such as nanotechnology will provide new opportunities for fighting naturally occurring disease as well as bioterror attacks.

The importance of casualty care and community resilience cannot be overstated. A bioterror attack will likely result in a mass casualty situation with large numbers of affected individuals and worried well converging on hospitals, clinics, and treatment facilities. The ability to rapidly assess and treat, instill public confidence, and communicate effectively will be essential for a quick response and recovery effort.

The implications of the framework are important to developing comprehensive programs that are both effective and efficient in dealing with an attack. In an era of scarce resources, we must ensure that we are spending wisely. Biological laboratory safety and control of dual-use technologies have received much attention recently. Deficiencies at biological safety level (BSL) laboratories, both in the labs and in their physical security, have been publically noted. Better controls are necessary for BSL facilities, but they are not sufficient. Likewise, efforts such as those by the Australia Group[23] and through the Proliferation Security Initiative[24] have less applicability for biological weapons where the pathogens are naturally occurring, and there are only modest requirements for developing and deploying BW weapons. This strongly implies that novel approaches must be developed for preventing, responding to, or recovering from a potential bioterror attack.

Bioterrorism is a very real and growing threat. We have seen a new type of terrorist emerge since the 1970s with a greater tendency toward taking global action and employing high violence strategies. This emerging terrorist has also demonstrated the propensity to employ nontraditional means such as airliners and fertilizers as weapons of mass destruction. It is becoming increasingly likely with trends in biotechnology that terrorists will turn to the use of biological pathogens for perpetrating bioterror attacks.

The nature of BW suggests that our ability to prevent such bioterror attacks cannot be assured, given the natural availability of disease-causing pathogens and advances in biotechnology that are allowing proliferation of potentially dangerous biological capabilities. However, we control our own destiny with regard to protecting populations and mounting an effective response and recovery. All indications are that the time to prepare is now. **JFQ**

NOTES

[1] Commission on the Prevention of WMD Proliferation and Terrorism, *World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism* (New York: Vintage, 2008), xv.

[2] David A. Lake, "Rational Extremism: Understanding Terrorism in the Twenty-First Century," *Dialog-IO* (Spring 2002), 1–29.

[3] Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 2006), 3–40.

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[5] National Counterterrorism Center, *2008 Report on Terrorism* (Washington, DC: Office of the Director of National Intelligence, April 30, 2009), available at <http://wits.nctc.gov/ReportPDF.do?f=crt2008nctcannexfinal.pdf>.

[6] See <www.rand.org/publications/randreview/issues/spring2004/enemy3.html>.

[7] Jessica Stern, *Terror in the Name of God: Why Religious Militants Kill* (New York: HarperCollins, 2003), 148.

[8] Hoffman, 209.

[9] The Monterey Institute of International Studies maintains a database on terrorist incidents that was used in the study.

[10] Raymond A. Zilinskas, "Final Report and Commentary: Bioterrorism Threat Assessment and Risk Management Workshop," presented to the U.S. Department of Energy, Monterey Institute of International Studies, June 24, 2003, 6.

[11] According to Robert Baker at George Mason University.

[12] Vernellia R. Randall, seminar entitled "Bioterrorism, Public Health and the Law," University of Dayton syllabus, available at <http://academic.udayton.edu/health/syllabi/bioterrorism/3bioterror/bioterror05.htm>.

[13] Ibid.

[14] Ibid.

[15] Jerry Seper, "Secret Project Manufactured Mock Anthrax," *The Washington Times*, October 26, 2001.

[16] Department of Defense, Office of the Under Secretary of Defense for Acquisition, Logistics, and Technology, *The Militarily Critical Technologies List Part II: Weapons of Mass Destruction Technologies (ADA 330102)*, "Section III: Biological Weapons Technology," February 1998, available at <www.fas.org/irp/threat/mctl98-2/p2sec03.pdf>.

[17] Ibid.

[18] Joby Warrick, "Custom-Built Pathogens Raise Bioterror Fears," *The Washington Post*, July 31, 2006, A1.

[19] Project BioWatch is a cooperative effort among the Department of Homeland Security (DHS), Environmental Protection Agency (EPA), and the Centers for Disease Controls (CDC) Laboratory Response Network to provide an early warning system for biothreats. There are currently over 4,000 atmospheric monitoring stations nationwide for the detection of atmospheric pollutants. Under the auspices of Project BioWatch, atmospheric samples in numerous cities are monitored around the clock for select agents. Filters from the sampling apparatus are analyzed by the CDC network for numerous biological threat agents. If any such agents were detected, mechanisms and protocols are in place for DHS, EPA, and CDC to reach crucial public health decisions rapidly, and promulgate a uniform course of action for local public health officials on the front lines.

[20] Project BioSense is intended to reduce the lag time between the detection of a possible bioagent and an appropriate response. Distinct from Project BioWatch, but integrated in function, Project BioSense relies upon multiple streams of information to facilitate rapid decisionmaking. Monitored parameters include environmental data from Project BioWatch, epidemiological information from hospitals administered by the Department of Defense and Veterans Affairs, reports from pharmacies across the Nation, and other sources of relevant syndromic and nontraditional data. All this information converges at the CDC Biointelligence Center, first for analysis, and then, if warranted, for coordinated response. Having this single center examine data from many different sources permits the detection of patterns and anomalies that may not be apparent through other means. Moreover, the CDC has long been entrusted with both gathering information from and disseminating information to frontline health care providers. This new role is a logical extension of that mission in which the CDC works hand in glove with clinicians at the local level to determine if an emergency response is warranted, and the necessary magnitude of that action.

[21] Project BioShield is a national security measure to stockpile drugs and treatments against terrorist threats first proposed by President George W. Bush in January 2003. The Project BioShield Act of 2004 was passed nearly unanimously by Congress and signed by the President on July 21, 2004, 560 days after Bush's initial proposal. Project BioShield was allocated $5.6 billion over the next 10 years to fund research and the purchase of vaccines, therapeutics, and other products (all pharmaceutical) against chemical, biological, and radiological attacks.

[22] Available at <www.dhs.gov/xabout/laws/gc_1219263961449.shtm#1>.

[23] The Australia Group, formed in 1985, is a body of approximately 40 likeminded nations that collaborate to restrain proliferation through a series of licensing measures on chemicals, biological agents, and dual-use equipment.

[24] The Proliferation Security Initiative, announced by President George W. Bush in 2003, was designed as a cooperative measure with nine European allies, Australia, and Japan to interdict WMD trafficking.

U.S. Air Force (Julianne Showalter)

F–35 Lightning II Joint Strike Fighter lacks high-altitude and supersonic cruise capabilities of F–22A Raptor and is not agile enough to evade modern surface-to-air missiles

EVOLVING TECHNOLOGICAL STRATEGY IN ADVANCED AIR DEFENSE SYSTEMS

By CARLO KOPP

Since the end of the Cold War, America's conventional military might has been predicated on the ability to control the air. This style of warfare produced stunning results in Operation *Desert Storm* in 1991 and has been successful in subsequent military campaigns in 1999, 2001, and 2003. The ability of U.S. aircraft to penetrate hostile airspace and deny the use of friendly airspace to opposing air forces is now mostly assumed to be as immutable as a law of nature.

Central to U.S. dominance in modern airpower has been the exclusive possession of stealth technology, which has provided the U.S. Air Force with the ability to penetrate Cold War–era air defense systems with negligible and historically unprecedented low combat loss rates. The development of stealth during the 1970s and 1980s must be ranked as one of the most important technological outcomes of the Cold War arms race.

If one historical certainty can be extracted from the study of technological arms races over the last four millennia, it is that advances in military technology will elicit both symmetric and asymmetric responses. This cyclic evolutionary pattern of "measures versus countermeasures" is observed in military systems as it is observed in biological systems, and the notion that it will somehow cease to occur so as to accommodate the expectations of any nation is neither reasonable nor realistic.

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U.S. Air Force (Julianne Showalter)

Post–Cold War Evolution

The U.S. investment in stealth during the last decade of the Cold War did not elicit serious concern in the Soviet Union. The deployment of the advanced and highly mobile S–300V/SA–12 Giant-Gladiator and S–300PM/SA–10B Grumble surface-to-air missile systems,[1] and the advanced MiG–29 Fulcrum and Su–27 Flanker fighter,[2] all supported by a range of then-modern radar designs, convinced Soviet planners that the pendulum in the technological arms race was swinging in their favor. The collapse of Saddam Hussein's air defense system in January of 1991—under a deluge of U.S. high-speed antiradiation missiles (HARMs) and British air-launched antiradiation missiles, and airborne jamming by EF–111A Raven and EA–6B Prowler aircraft—was a major embarrassment for proponents of the Soviet model of dense, overlapping, and complex integrated air defense systems (IADS). Even more traumatic was the observation that stealthy F–117A Nighthawks were able to penetrate the strongest portions of the Iraqi air defense system with impunity night after night, with no losses suffered in combat.[3]

Stealth or very low observable technology, the large-scale use of precision-guided munitions (PGMs), and advanced intelligence, surveillance, and reconnaissance (ISR) technologies provide the United States with a pivotal advantage in the contest for control of the skies. The possession of these three key technologies has defined U.S. airpower and U.S. warfighting "style" in nation-state conflicts since the fall of the Soviet Union.

The end of the Cold War was a pivotal discontinuity for the expansive Soviet bloc defense industry, characterized then by central control, virtually unlimited access to taxpayer funding, and a secure long-term market comprising the Soviet armed services, their Warsaw Pact siblings, and a plethora of clients in the "nonaligned" and developing world. Within a matter of months, this secure environment collapsed, leaving this enormous military-industrial complex to fend for itself. Through the 1990s, the industry restructured around a model based on intensive technological and commercial competition, with a primary export market focus.

Large portions of the industry became joint stock companies, and many mergers occurred. Within the industry, a new generation of corporate managers emerged, mostly former engineers and technical professionals, rather than the loyal Communist Party cadres of the Soviet era. In many respects, Russia's defense industry now resembles that of the United States in the 1950s and 1960s—smart, competitive, lean, aggressive, and prepared to take calculated risks, both technologically and commercially, but funded through export sales. Surviving on market demand means catering to the interests and preferences of client nations. The success of U.S.-led air campaigns since 1991 produced a high demand for products capable of deterring U.S. military action.

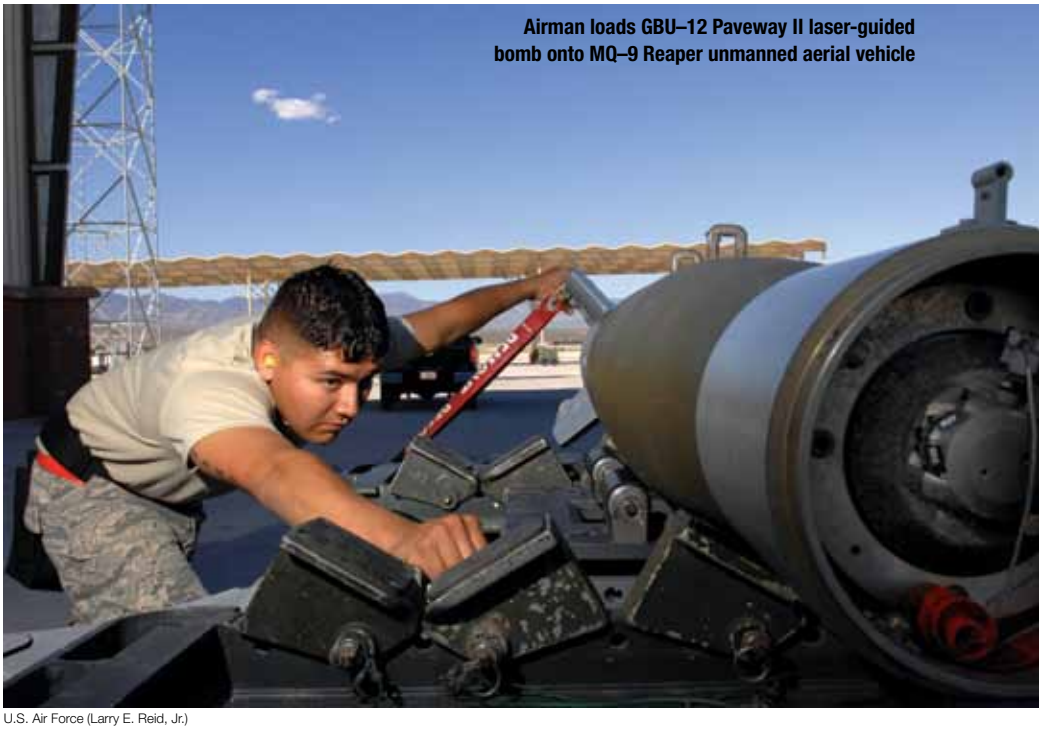
By the mid to late 1990s, technological strategists across the Russian industry defined the agenda for the next generation of products. The focus was placed in three areas, which were the defeat of U.S. PGMs, defeat of U.S. ISR capabilities, and most importantly, defeat of U.S. stealth technologies. Concurrently, symmetric responses to U.S. capabilities emerged, including the development of high-performance conventional fighters, such as the Su–35S and MiG–35, the MiG SKAT stealthy unmanned aerial vehicle and PAK–FA high-performance stealth fighter, a wide range of smart munitions that are direct analogues of U.S. designs, and many uniquely Russian supersonic weapons.

Russian industry took the lead in the drive to overcome key U.S. capabilities, but was soon followed by the Chinese and numerous former Soviet republics, including Belarus and Ukraine.

An important factor enabling the introduction of advanced high-technology capabilities, whether symmetric or asymmetric relative to U.S. capabilities, has been unhindered access to the globalized market for advanced basic technology, especially computer hardware and software, but also commercial Gallium arsenide[4] radio frequency components and many other technologies. Both Russian and Chinese industries can now match most of the basic technology used in contemporary U.S. weapons manufacture. The United States currently maintains a robust lead only in stealth technologies and just incremental leads across most other military technologies, the strongest in radar and electro-optical equipment.

the success of U.S.-led air campaigns since 1991 produced a high demand for products capable of deterring U.S. military action

The three-pronged technological strategy for the defeat of U.S. airpower is manifested in a wide range of programs, many of which are now well established, and is resulting in exported products. The approach adopted for the defeat of smart munitions is an application of three basic technologies. The first is point defense weapons specifically intended to kill smart weapons during the terminal endgame, as they near the target and become easily detected. The 9K332 Tor



Airman loads GBU–12 Paveway II laser-guided bomb onto MQ–9 Reaper unmanned aerial vehicle

U.S. Air Force (Larry E. Reid, Jr.)

M2E, evolved from the SA–15 Gauntlet,[5] and the 96K6 Pantsir S1/SA–22, are both digital weapons systems equipped with phased array engagement radars derived from fighter radar technology and are specifically designed to kill the HARM/advanced antiradiation guided missile, Small Diameter Bomb, Paveway, Joint Direct Attack Munition smart bombs, and U.S. cruise missiles.[6]

Comprehensive threat warning and countermeasures packages are now supplied for a range of air defense radars, including missile approach warning systems, coherent and incoherent radar decoys, chaff mortars, flare dispensers, smoke generators, and Global Positioning System jammers of varying capabilities.

Finally, there has been a comprehensive shift away from Soviet-era semimobile deployment of air defense weapons and sensors. Part of this shift has also involved rehosting many Soviet and post–Soviet-era radar, surface-to-air (SAM), and antiaircraft artillery systems from tracked vehicles to wheeled vehicles. The benchmark for current Russian air defense equipment is a 5-minute "shoot and scoot" capability. The late model S–300PMU2 Favorit/SA–20, S–400 Triumf/SA–21, 9K332 Tor M2E, and 96K6 Pantsir S1/SA–22 all meet this benchmark on wheeled chassis. Intended programs include the wheeled S–300VMK/SA–X–23, and the latest wheeled variant of the Buk M2/SA–17 Grizzly. All of these systems are fitted with digital phased array radars and all use digital radio networks to connect batteries and supporting systems.

during the 1990s the Russians developed a number of "counter-ISR" weapons, most of which are now in production

In the present and near future, U.S. aircraft will have to confront highly mobile air defenses operating under a sniper-like "hide, shoot, and scoot" doctrine and deal with the reality that only a fraction of smart munitions launched will survive terminal short-range missile, gun, and countermeasures defenses to actually impact their intended targets, including key air defense assets.

The intent to defeat U.S. ISR capabilities has produced a range of new technologies, but also further evolution of some late Soviet-era products, which remained in production. During the late Cold War, the Soviets maintained a large inventory of ground-based and airborne microwave-band high-power jammers, intended to defeat the North Atlantic Treaty Organization (NATO)/U.S. E–3 Airborne Warning and Control System (AWACS), U–2, and E–8 Joint Surveillance Target Attack Radar System (JSTARS). They also deployed a wide range of antiradiation missiles, mostly modeled on U.S. and European designs.

While the Soviet-era fleet of airborne jammers, comprising Yak–28PP Brewer E, Tu–16P Buket Badger J, and Tu–16PP Azaliya Badger L, respective analogues to the U.S. EF–111A Raven and EA–6B Prowler, collapsed during the early 1990s, ground-based jammers designed to disrupt U.S. airborne ISR radars not only remain in production, but also have been upgraded extensively with digital hardware and commercial off the shelf (COTS) computers. These include the Signal Topol E jammer built to defeat U.S. Navy E–2C variants, the Pelena 1 and 2 series built to defeat the E–3 AWACS radars, and the Kvant SPN–2/1RL248 series, which is sup-

U.S. Air Force (Kristen Stanley)

Lockheed Martin representative demonstrates F–22 Raptor flight simulator

plied in a range of X-band and K_u-band variants intended to blind U.S. high-resolution ground-mapping ISR radars carried by the E–8 JSTARS, U–2, RQ–4 Global Hawk, and various tactical fighters and smaller unmanned aerial vehicles (UAVs).

While Russian "soft kill" measures against U.S. ISR have seen evolutionary growth, "hard kill" measures have seen revolutionary growth. During the Cold War, the only hard kill weapon specifically built to deny ISR access was the S–200 Dubna-Vega/SA–5 Gammon SAM system, some variants of which could hit high-altitude targets at ranges as great as 160 nautical miles. The Russians retired their inventory of SA–5s during the late 1990s and sold off their warstocks to numerous nations, including Iran.

More importantly, during the 1990s the Russians developed a number of "counter-ISR" weapons, most of which are now in production. The Vympel R–37/AA–13 Arrow, intended to be carried by the MiG–31 Foxhound and Su–27M Flanker fighters, can kill an ISR aircraft, airborne jammer, or tanker from 160 nautical miles of range, outperforming the now retired U.S. Navy AIM–54C Phoenix. The larger Novator R–172, in development for the Su–35S Flanker, is built to kill targets at 215 nautical miles.

Much more important, however, has been the development of advanced long-range SAMs for this purpose, using modern guidance algorithms. Experiments performed by Almaz during the 1990s showed that SAMs could be flown much farther if they were steered along a ballistic midcourse trajectory, akin to a theater ballistic missile, rather than conventional "climb-cruise-home" trajectories. This technique had the added advantage of improving SAM endgame lethality as the missile picks up speed diving on its target. The late model SA–20 and SA–21 48N6E2/3 missile variants, using this technique, can hit targets at 108 to 135 nautical miles of range. The new SA–21 40N6 missile has a maximum range of 215 nautical miles, providing a genuine capability to deny ISR coverage.

The increased range performance of these missiles has seen commensurate increases in radar transmitter power levels, incrementally increasing useful ranges against stealth aircraft. While the primary stated use of these weapons is to kill ISR platforms or deter their use, Russian literature indicates another intended application, which is to kill or deter the use of high-power electronic warfare platforms such as the EA–6B Prowler, EA–18G Growler, and EC–130 Compass Call. The Chinese extended this model further and installed a wideband antiradiation seeker, analogous to that in the U.S. HARM, into the FT–2000 SAM, itself based on the FD–2000 airframe developed from the Russian SA–10 and SA–20. To date, the Russians have not announced any antiradiation seekers for SAMs, but could easily adapt the very precise Avtomatika L–112 series currently in production for Kh–31PD/AS–17 Krypton series antiradiation missiles.

These designs are capable of accurately identifying and geolocating emitting targets, tracking aircraft not only by high-power radar and electronic warfare equipment emissions, but also by lower power Joint Tactical Information Distribution System/Link-16 terminal and identification, friend or foe (IFF) transponder emissions. The recent U.S. Air Force decision to fit the directional Multifunction Advanced Data Link in preference to the Joint Tactical Radio System is primarily related to the proliferation of such systems.[7]

U.S. Air Force (Aaron D. Allmon II)

Air Force F–117A Nighthawk stealth fighter penetrated best-defended portions of Iraqi air defense systems with no losses during Operation *Desert Storm*

in any near future conflict, U.S. forces will have to confront a complex spectrum of air defense systems

Targeting of these weapons is performed using two means. Fire control or engagement radars for these SAMs have been equipped specifically with passive angle tracking hardware to target airborne jammers directly. Concurrently, a range of advanced passive detection systems have been developed and a number integrated with advanced SAM systems. These evolved in part from the well-known Cold War–era KTRP–81 Ramona or Soft Ball, and later KTRP–86/91 Tamara or Trash Can. These include the 85V6 Orion/Vega series, the 1L222 Avtobaza, and the Chinese YLC–20, the last borrowing in part from the Ukrainian Topaz Kolchuga M system.

Russia's technological effort to deny the use of U.S. ISR and smart weapons capabilities is directly related to its effort to defeat stealth technologies. Prior to the advent of stealth, the principal strategy for penetrating air defenses involved the use of ISR capabilities to map opposing air defenses, which were then subjected to a barrage of high-power jamming by airborne electronic warfare platforms and a deluge of smart munitions targeting the enemy's radars and SAM sites. By putting ISR platforms at serious risk, and by attriting smart munitions during the terminal phase of flight, this technological strategy blunts, if not wholly

defeats, U.S. legacy techniques for breaking opposing air defense systems, increasing U.S. strategic dependency on stealth.

Counterstealth Systems

When surveying and assessing counterstealth systems, it is necessary to place them into context. While they can be deployed as "add on accessories" to a legacy Soviet-era air defense system to increase its potency, many of these systems are being explicitly designed around the doctrine of high mobility and integration through radio networking with modern digital air defense weapons.

In any near future conflict, U.S. forces will have to confront a complex spectrum of air defense systems, ranging from legacy Soviet systems to newly built Russian and Chinese systems, with various hybrid mixes of Cold War and new systems possible and likely. Digital and solid-state radar upgrades to legacy Soviet-era S–125 Neva/SA–3 Goa, S–200 Vega/SA–5 Gammon, 2K12 Kvadrat/SA–6 Gainful, 9K33 Osa/SA–8 Gecko, 9K35/SA–13 Gopher, and 9K37 Buk/SA–11 Gadfly have proven popular in the market. Mobility upgrades using new self-propelled configurations for the S–125 Neva/SA–3 Goa and 9K33 Osa/SA–8 Gecko have proven especially popular. Russian and Belarus manufacturers have also reengineered all of their Cold War–era mobile IADS and battery command posts, and developed new derivatives, using modern digital COTS technology.

The Russians suffered the loss of several combat aircraft, including a Tupolev Tu–22M3 Backfire heavy bomber, to Georgian SAM defenses during their recent adventure. Covertly upgraded by Ukrainian contractors, the Georgian systems were not effectively countered by the electronic warfare self-protection systems on Russian aircraft.[8]

The mainstays of Russian counterstealth technology are VHF-band radars. This focus is for good engineering reasons. Stealth designs, such as Electronic Warfare Self Protection equipment, are characteristically built to defeat specific classes and categories of radar equipment. Two strategies have been used to date. Aircraft intended to penetrate complex and deep air defenses are designed with "wideband" stealth, intended to defeat as wide a range of radar types as possible. Aircraft intended to defeat shallow defenses or scattered battlefield air defenses are built with "narrow band" stealth, designed to "break the kill chain" by defeating fire control or engagement radars only.

Stealth designers have two principal technologies available for reducing the radar signature of an aircraft. These are shaping of airframe features and materials technology applied in coatings or absorbent structures.[9] Typically, the first 100- to 1,000-fold reduction in signature is produced by shaping, with further 10- to 30-fold reductions produced by materials. The smart application of these techniques reduces the signature of a B–52-sized B–2A Spirit down to that of a small bird, from key aspects.

The effectiveness of both shaping and materials technologies varies strongly with the wavelength or frequency of the threat radar in question. Shaping features must be physically larger than the wavelength of the radar to be truly effective. A shaping feature with a negligible signature in the centimeter X-band or K_u-band may have a signature that is 10-fold or greater in the much lower decimeter and meter radar bands.[10]

Russian effort to provide counterstealth capabilities is not confined to conventional VHF-band radar

Materials are also characteristically less effective as radar wavelength is increased, due not only to the physics of energy loss, but also to the "skin effect" whereby the electromagnetic waves impinging on the surface of an aircraft penetrate into or through the coating materials. A material that is highly effective in the centimeter X-band or K_u-band may have a 10-fold or less useful effect in the lower decimeter and meter radar bands.[11]

Russian counterstealth radar designers have publicly reiterated that their focus on VHF-band radars is based on the much reduced effectiveness of shaping and materials designed to defeat upper band radars, when confronting VHF-band radars. In the West, VHF-band search radar was largely abandoned during the 1950s in favor of magnetron and traveling wave tube–based radars operating in the higher L-band and S-band. The Soviets persisted with this technology until the end of the Cold War, primarily as VHF-band radars were much cheaper to manufacture, using antenna and transmitter technology similar to that used in television transmitters. The best known Soviet VHF-band radars were the P–8/P–10 Delfin or Knife Rest, and later the P–12/P–18 Spoon Rest, built by the thousands and exported as search and acquisition radars for the S–75 or SA–2 Guideline SAM system. Less common was the much larger P–14 Tall King, used most often as a search radar for S–200/SA–5 Gammon batteries. These cumbersome designs were slow to deploy and stow, were very inaccurate in measuring target positions, lacked height-finding capability, and performed poorly against low-flying targets and jamming. In the West, Russian VHF radar is typically identified with the Spoon Rest and Tall King generation of technology.

Post–Cold War VHF-band radars are fundamentally different in design and make use of the latest solid-state radar techniques and advanced COTS computing and software technologies. At least two are active electronically steered array (AESA) designs, with agile beam-steering capabilities within a sector comparable to the U.S. Navy SPY–1 Aegis radar, and miniaturized solid-state transmitters and receivers in each antenna element. Advanced clutter suppression technologies, such as Space Time Adaptive Processing[12] recently introduced into the U.S. Navy E–2C/D, are a known feature of at least two recent Russian VHF-band designs.

Advanced processing aside, the use of AESA technology is a critical advance in these radars, as it not only provides for fast and accurate target angle measurement using monopulse techniques, but also permits the use of powerful nulling techniques for suppressing hostile jamming. The cited accuracy of some new VHF-band radars is similar to that of established Russian L-band and S-band radars used for SAM targeting.

Unlike Cold War–era designs, many of the current VHF-band designs are highly mobile self-propelled systems, and two qualify as genuine "shoot and scoot" designs. The largest and longest ranging VHF-band radar now in production is the NNIIRT 55Zh6 Nebo U or Tall Rack, which has been integrated with the SA–21 and is now being deployed around Moscow. The sheer size of this radar denies it mobility. It has a characteristic inverted T antenna system and provides very accurate height finding capability.

Comparable in performance is the VHF-band Rezonans N/NE, which is explicitly

marketed as "Stealth Air Target Early Warning Radar." Like the Nebo U/UE series, it takes 24 hours to deploy and is intended for static long-range air defense applications. Production quantities remain unknown at this time. Unlike the Nebo U/UE, it uses electronic beam steering techniques. Much more interesting are the newer NNIIRT-designed 1L119 Nebo SVU and Nebo M RLM–M radars, which are self-propelled and designed from the outset to support SAM batteries in the field.

The earlier Nebo SVU is a modern AESA design carried by semitrailer and capable of stowing and deploying in 20 minutes, significantly less time than observed with legacy Soviet air defense radars. The 84-element folding AESA combines mechanical steering in azimuth and tilt, like a conventional radar, and provides electronic beam steering. This is used during conventional circular sweeps to provide highly accurate angle measurement, with errors claimed by NNIIRT to be similar to the S-band 64N6E Big Bird series phased array used for SA–20 target acquisition. In sector search mode, the Nebo SVU is mechanically rotated to point at the threat sector, and then performs agile electronic beam steering through a claimed ~50° arc, not unlike the Patriot's MPQ–53 phased array radar. The primary cited application for the Nebo SVU is target acquisition for SAM batteries.

Russia's development of counterstealth radars will reshape, over the coming decade, the character of the air defense systems the United States will confront in future expeditionary operations

The Nebo M RLM–M is the much more powerful and accurate self-propelled offspring of the Nebo SVU. Using a similar but much larger hydraulically deployed and stowed AESA design with 168 active elements, this system is carried on the same 8×8 all-terrain BAZ–690915 chassis as SA–21 SAM system launchers. It provides around 40 percent more range and much more accurate angle measurement than the Nebo SVU, retaining the electronic beam steering agility of its predecessor.

The RLM–M is a formidable modern radar in its own right. It is intended for use as part of the Nebo M multiband counterstealth radar system, which employs the VHF-band RLM–M, the L-band RLM–D, and the S-band RLM-S AESA radars, all networked together via the RLM–KU command post. What is not stated in the Russian-language PowerPoint slides is that by default, this system must incorporate a radar track fusion capability similar to that in the recently introduced U.S. Navy Cooperative Engagement Capability (CEC) system.[13] Proper deployment of the Nebo M would see the VHF-band radar painting incoming stealth aircraft head on and the flanking L-band and S-band components painting the target from the often less stealthy sides. Also unstated is that with an operational networked "CEC-like" track fusion system resident in the RLM–KU command post, other more potent configurations with multiple radars are feasible—for instance, networking and fusing tracks from several RLM–M or RLM–D systems.

U.S. F–22 Raptor stealth fighter

U.S. Air Force (Michael B. Keller)

Another interesting recent development is the Belarus-designed KBR Vostok E VHF-band solid-state radar, capable of hydraulic stow and deploy in a mere 6 minutes, approaching the "shoot and scoot" capability of the SAM batteries it is designed to support. Intended to replace the Spoon Rest, KBR recently claimed their first export to an undisclosed client. First displayed in 2007, this design uses an entirely new and much more compact antenna element scheme. KBR claims this radar will track an F–117A Nighthawk class stealth target at 40 nautical miles of range.

The Russian effort to provide counterstealth capabilities is not confined to conventional VHF-band radar. The NNIIRT 52E6MU Struna-1MU/Barrier E is a multistatic, low-power tripwire system, using a passive coherent location (PCL) technology similar to the U.S. LM Silent Sentry design.[14] Like the Silent Sentry, the Barrier E is limited in effect to low- and medium-altitude targets. What is often unstated about PCL systems is that the "transmitters of opportunity" such designs rely upon (for example, VHF- and UHF-band television and radio stations) use antenna designs specifically built to transmit almost all of their power near the ground—power transmitted upward is considered wasted in such applications. The result is that the effectiveness of such systems is very limited at high altitudes.

While VHF-band is the focal area for Russian counterstealth development, high-power L-band radars at 24 to 30 centimeters are an area of active development because stealth designs strongly optimized for the centimeter bands suffer appreciable radar signature increases in the L-band, even if not as pronounced as in the VHF-band.

The VNIIRT 67N6E Gamma DE is a good example of such, as it is a high-power mobile L-band AESA design intended for air defense and ballistic missile defense applications. Like the Nebo SVU and Nebo M RLM–D radars, it can be mechanically rotated, or locked to a sector to perform Aegis-like electronic beam steering sector searches. Similar advanced digital processing is employed. VNIIRT claims the ability to acquire and track a 0.01-square-meter target at 70 nautical miles range.

The shift to lower band operation has not been confined to ground-based radar. The new Chinese KJ–2000 and KJ–200 AWACS aircraft appear to be L-band AESA designs, in part because the solid-state transmitters are easier to build for L-band compared to the S-band used by the U.S. APY–1 and –2 AWACS radars. The Chinese KJ–2000 is modeled on the Israeli Phalcon, the sale of which to China was blocked by the Clinton administration.

An important development is Tikhomirov NIIP's new L-band AESA intended for installation in the leading edges of the wings of fighter aircraft, with the demonstrator sized for the Russian Flanker fighter. With considerable growth potential in power and antenna size, this radar has the potential to be effective against stealth designs, which have been strongly optimized against centimeter band threats. This author performed extensive performance modeling on this design. Growth configurations will be capable of tracking a 0.01-square-meter L-band target at 20 nautical miles, a tactically useful distance.

the survivability of the F–35 depends wholly on its stealth performance

In summary, Russia's technological effort in the development of counterstealth radars is broad and deep and will reshape, over the coming decade, the character of the air defense systems the United States will confront in future expeditionary operations. The common argument of "Why should new Russian SAMs perform any better than in 1991?" overlooks the fundamental reality that all of the pivotal technological limitations exploited in 1991 have been engineered out of current technology SAM systems, many of which now approach, match, or exceed the sophistication of U.S. and European Union designs.

Stealth Aircraft versus Counterstealth Systems

The idea that stealth is an expired technology, no longer worth investing in, has become quite popular, yet it is also fundamentally wrong. The lethality and survivability of the new generation of air defense systems now appearing in the market are so high that conventional defense penetration techniques predating stealth will be almost completely ineffective. Very-long-range "ballistic" SAMs will make life interesting—and often short—for crews flying ISR and stand-off jamming missions.

As extensive as the Russian investment in the development of VHF-band counterstealth systems may be, these will be almost completely ineffective against the B–2A Spirit, as its physical size yields effective shaping in the VHF-band, and the depth of its leading-edge absorbent structures is sufficient to remain effective in the meter wavelength bands. The same would also be true of the New Generation Bomber, should it eventually be developed.

Russian VHF-band counterstealth radars will become a major operational issue for the future U.S. fighter fleet as the size of these aircraft precludes effective shaping in the VHF-band. Many VHF radars will be able to track stealthy fighters at tactically useful distances, albeit much smaller compared to legacy fighters. A fighter's ability to survive is then determined by its ability to deny launch opportunities through speed and altitude, evade any launched SAMs through high turn rate maneuvering, and compromise terminal SAM seeker guidance by stealth and electronic countermeasures.

The F–22A Raptor is in a strong position because its high penetration altitude and supersonic cruise capability place it out of reach of all but the best long-range SAMs. Its stealth is effective from all key aspects, and its shaping is well designed to defeat threat radars from the K_u-band down to the L-band, negating all but the VHF-band radars. The aircraft's high supersonic turn rate maneuver capability will provide it with an excellent ability to spoil SAM endgame maneuvers. The aircraft is large enough to accommodate internal electronic countermeasures equipment for endgame self-defense.

The same cannot be said of the F–35 Joint Strike Fighter, intended to equip Air Force, Navy, and Marine Corps squadrons over the coming decade. Lacking the high altitude and supersonic cruise capabilities of the F–22A Raptor, the F–35 operates well inside the kinematic engagement envelopes of most modern medium- and long-range SAM systems. This aircraft is therefore wholly dependent on stealth and supporting electronic countermeasures to survive, in a more challenging portion of the flight envelope, where it is within reach of a much larger number of SAM types, and where SAM endgame maneuver performance is better due to higher air density. The F–35 will not deliver the agility required to effectively evade modern SAMs by maneuver.

Proponents of the F–35 have argued that the aircraft's stealth performance, and the intended capability of its Northrop Grumman APG–81 AESA radar to jam X-band and some S-band threat radars, will be sufficient to permit the F–35 to penetrate deep into air defense systems equipped with modern SAMs, with the superceded SA–20 often cited as an example. Unfortunately, such air defense systems will use passive angle tracking facilities on fire control radars, and emitter locating systems, to exploit any AESA jamming emissions to target and guide SAM shots. The use of the AESA as an electronic warfare self-protection device presents risks that may often exceed its utility in this role. Moreover, the use of the AESA as a directed energy weapon to disable the electronics of inbound missiles is an equally questionable tactic, as measures to harden missiles against this mode of attack are cheap and easy to implement.

The survivability of the F–35 thus depends wholly on its stealth performance. The stated X-band radar cross section of 0.001 square meters for this design[15] in its forward sector is respectable but degrades with increasing threat radar wavelength. Some design choices in the shaping of the F–35, such as the sculpted lower fuselage and axi-symmetric exhaust nozzle, are simply not compatible with the deep penetration of advanced air defense systems where high-power threat radars in the L-band through to the X-band may illuminate the aircraft from any aspect, and some at steep elevation angles. This is why these design "features" were not used on the F–117A Nighthawk, B–2A Spirit, cancelled A–12A Avenger II, and F–22A Raptor.

The reasoning behind the compromises in the stealth design of the F–35 was that the threat systems that could put it at risk would be preemptively destroyed by the F–22A Raptor force in the opening phase of an air campaign, using the Small Diameter Bomb and the potent internal ALR–94 Emitter Locating System. This was feasible for the type of air defense threats seen a decade ago, but is not true for the highly mobile, networked modern systems we now see, designed around a "hide, shoot, and scoot" doctrine. The defeat of such air defense systems will inevitably be a slow process of grinding attrition. It is worth observing that the "hide, shoot, and scoot" doctrine presented a genuine challenge during the 1999 Operation *Allied Force* air campaign—and most of the obsolescent SA–6 Gainful batteries deployed actually survived the conflict.[16]

U.S. Options

High-power standoff jamming of VHF-band radars is technically feasible, but the advent of very long range "ballistic" SAMs will present survivability problems for jamming platforms, be they crewed or robotic. Fighter-sized aircraft and UAVs intended to survive advanced air defenses need to be built around either of two design strategies. One is the "stealth + speed + altitude + agility" model employed in the F–22A Raptor, and the other is the "very wide band stealth shaping" model employed in the cancelled A–12A Avenger II and the proposed X–47 unmanned combat aerial vehicle.

The strategic challenge the United States now faces is that neither of the viable technological strategies capable of defeating modern counterstealth systems are politically compatible with the absolute commitment that has been made to manufacturing large numbers of F–35 Joint Strike Fighters. **JFQ**

NOTES

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Presidents Obama and Dmitry Medvedev discuss replacement treaty to reduce nuclear arms at APEC summit in Singapore

AP Images (RIA-Novosti, Mikhail Klimentyev, Presidential Press Service)

Post-START, Re-START *and* New START

DEFOGGING RUSSIAN-AMERICAN STRATEGIC NUCLEAR ARMS CONTROL

By STEPHEN J. CIMBALA

The accomplishment of a post–Strategic Arms Reduction Treaty (START) I nuclear arms reduction agreement by Russia and the United States calls to mind a Chinese character that stands for both opportunity *and* danger. Post-START success opens the door to further reductions in both states' nuclear arsenals, and it also creates a possible driver for U.S. and Russian leadership on nuclear nonproliferation. Danger lies in the expectation that post-START political or military success follows automatically from good intentions or less frosty diplomatic demarches.

Nuclear arms control, like strategy in general, is driven by politics—especially the high politics of state demands for power, prestige, and security. Therefore, the follow-

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ing discussion proceeds in two steps. We first consider the larger frame of political context for post-START restart. In a second step, we apply statistical analysis to establish boundaries on the possible, as opposed to the improbable or impossible. Arms control, like all policy issues, suffers from its vulnerability to claims of extremity, apart from any empirical referents or supportive context.

The Big Push

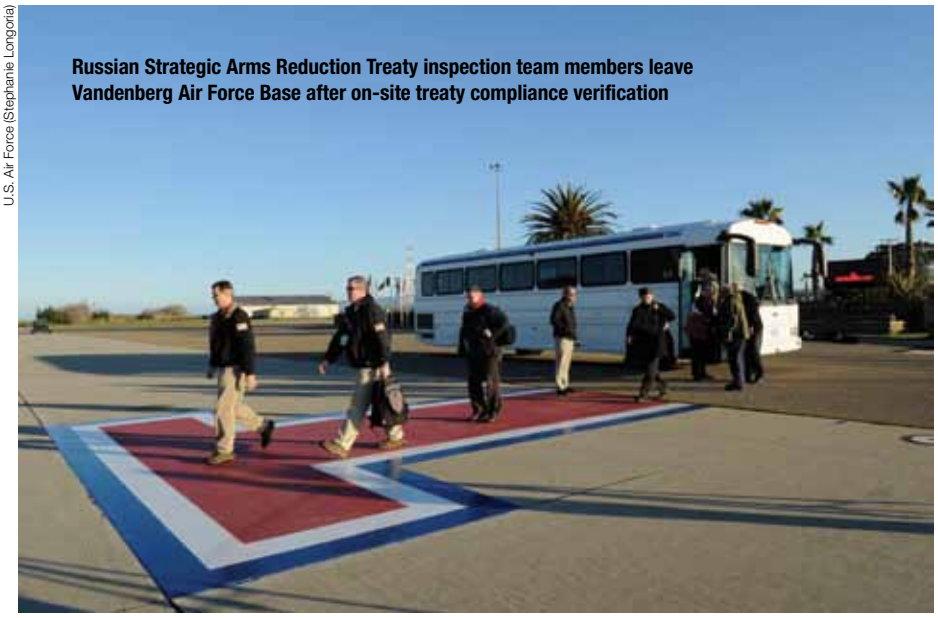
Opportunities. The Obama administration has committed the United States to an ambitious agenda with respect to the reduction of global nuclear danger.[1] This agenda includes:

- the accomplishment of a post-START agreement with Russia on the reduction of long-range or "strategic" nuclear weapons[2]
- resubmission of the Comprehensive Test Ban Treaty signed by the Clinton administration but rejected by the U.S. Senate for ratification in 1999
- review conference for the Nuclear Non-Proliferation Treaty (NPT), scheduled for May 2010, in New York
- in line with post-START and NPT objectives, encouragement of other nuclear weapons states to reduce their numbers of deployed nuclear warheads and nuclear-capable launchers
- international efforts on the part of International Atomic Energy Agency (IAEA) inspectors and various negotiating "contact groups" to disarm North Korea as a nuclear weapons state and to prevent Iran from joining the ranks of military nuclear powers.

This activist schedule of arms control and disarmament objectives is by no means the endgame for an ambitious U.S. President. Nuclear arms reductions and nonproliferation are way stations on the road to the eventual abolition of nuclear weapons worldwide.[3]

With respect to post-START reductions, U.S. and Russian negotiators were tasked by their respective governments to plan for reductions in each state's numbers of deployed strategic nuclear weapons to ranges from 1,675 to 1,500 warheads and 1,100 to 500 strategic delivery vehicles (intercontinental ballistic missiles [ICBMs] and long-range bombers). These reduction targets were to be reached within 7 years of the post-START treaty's entry into force—presumably, 2016 or so. The final text of the treaty would not necessarily include these exact ranges, which would be the subject of continuing negotiation. According to expert Obama administration testimony, the post-START agreement would "combine the predictability of START and the flexibility of the Strategic Offensive Reductions Treaty" (SORT, or the Moscow Treaty of 2002) by "borrowing from the best elements of START on definitions, data exchanges, notifications, eliminations, inspections and verification procedures" as well as "confidence building and transparency measures."[4]

U.S. Air Force (Stephanie Longoria)



Russian Strategic Arms Reduction Treaty inspection team members leave Vandenberg Air Force Base after on-site treaty compliance verification

The initial nuclear reductions agreement would not necessarily be the last word. Follow-on agreements might take the numbers of warheads and launchers deployed by both states even lower. Success in the initial or follow-on stages would require navigation of details that included the status of nuclear weapons that were removed from active service and stored, but not destroyed. Russians worried about this as a possible problem of "upload" potential that the United States might use to its advantage. Another possibly contentious issue for post-START negotiators was the conventionalization of nuclear-capable launchers. The Bush administration plan to equip some strategic ballistic missile submarines (SSBNs) with conventionally armed submarine-launched ballistic missiles (SLBMs), instead of nuclear warheads, caused concern in Russia. Other issues of possible disagreement included technical matters having to do with the extent to which the framework for verification would carry over from START I to the post-START regime, including inspection protocols.

The appearance of nuclear-strategic parity as between the United States and Russia has a political marketing niche, but it should not be oversold as military-strategic currency. Russia and the United States have more realistic and immediate concerns than the prospect of a Russian nuclear attack on North America or vice versa. The nuclear threat to each lies in other gargoyles lurking about, including those discussed in later sections. Therefore, the *perception* of a possible Russian lag in nuclear-strategic parity with the United States is a wasting political asset for pessimists because history has moved on to other, and more probable, sideswipes.

Connections: The Matrix. Even if these post-START offensive arms reductions succeed on their own terms, they cannot be isolated from other important issues, including problems directly related to nuclear arms control. Three obvious candidates for other related issues included nuclear nonproliferation, disarmament (including the call by Obama and other leaders for eventual nuclear abolition), and missile defenses. U.S.-Russian nuclear arms reductions are related to nonproliferation, disarmament, and missile defenses not only in the world of analysis and speculation, but also in the "real world" of policymaking.

With regard to nonproliferation, the United States and Russia have both congruent and conflicting objectives. Each recognizes the risks posed by terrorists or rogue states with nuclear weapons. However, Moscow and Washington differ as to their preferred methods for dealing with recalcitrant states

Inspection team meets during integrated field exercise in Kazakhstan

CTBTO

that have joined, or plan to join, the club of nuclear weapons states. The United States, at least under George W. Bush, asserted the right to use preemptive war and regime change as means of nonproliferation or counterproliferation. The distinction between the two modalities, nonproliferation and counterproliferation, is of two sorts. The first distinction is temporal. Nonproliferation usually refers to preventing nonnuclear states or others from acquiring, deploying, or using nuclear weapons. It emphasizes the "before" of nuclear weapons capability. Counterproliferation usually implies that a state or other actor has already obtained nuclear or other weapons of mass destruction (WMD) against the wishes of the international community, which is now operating in the "after" mode and must decide what to do about it.

A second customary distinction between nonproliferation and counterproliferation lies in the preferred means used by states or international actors. Nuclear nonproliferation has mostly depended upon diplomatic agreement, including treaties that have been supported by the United Nations (UN) or other international organizations. The NPT illustrates this kind of agreed regime for international containment of nuclear weapons spread, monitored by, and enforced through the UN and its arm for nuclear monitoring and inspection, the IAEA. Counterproliferation, on the other hand, is assumed to rely upon military or other coercive means to deter nonnuclear states from going nuclear, or disarming them if they do so in defiance of the international community. In practice, actual measures of enforcement may cross the line between nonproliferation and counterproliferation: coercive diplomacy, economic sanctions, and other means have been used as forms of military persuasions by "contact group" states against both North Korea and Iran within recent years.

U.S. intelligence revealed in September 2009 that Iran had a previously undisclosed nuclear research facility under construction near Qom. Complicated negotiations among Russia, France, the United States, and the UN in October 2009 resulted in a presumed agreement for Iran to ship low enriched uranium (LEU) back to Russia and then France for reprocessing and return to Iran for use in its Tehran Research Reactor. As of early November, Iran and its interlocutors were still haggling over the details of implementation. Meanwhile, skeptics feared that Iran had already become a "virtual" nuclear weapons state, with sufficient numbers of centrifuges to provide LEU for civil nuclear power or faster spinning centrifuges for weapons grade material.

U.S.-Russian cooperation on North Korea under Presidents Obama and Bush has taken place through the five-party contact group of South Korea, Japan, and China, together with Russia and the United States. The Obama administration indicated in October 2009 that it might agree to several bilateral meetings with North Korea in advance of further meetings among the six parties. North Korea's previous demarches forward, and then backward, with respect to disarmament of its nuclear weapons capabilities, have led U.S. and other interlocutors to understandable skepticism about its intentions. The President of South Korea suggested in the fall of 2009 that North Korean dictator Kim Jong-il was hoping to keep talks going around in circles until President Obama and he were both out of office. If so, the case of North Korean nuclear proliferation would be a "done deal" and a significant failure for the nonproliferation regime.

North Korea was politically isolated from meaningful support for its nuclear ambitions, and firm but friendly persuasion by China, Pyongyang's major economic benefactor, is an indispensable part of any journey toward the accomplishment of a denuclearized Korean Peninsula. Nevertheless, North Korea still wants some payoffs or quid pro quos from the United States, including continued delisting from the U.S. list of states that support terrorism, economic incentives, and guarantees against regime change. The best approach to the denuclearization of North Korea might be for Washington to propose an agreed, official termination of the Korean War, which is still officially in progress (an armistice terminated the fighting in 1953). A war termination agreement among the United States, North Korea, and South Korea might be brokered by China, an undeclared but significant military participant in that conflict. Concluding an official peace ending the Korean War would be a de facto recognition by the United States of North Korea's legitimacy as a regime—a symbolic payoff for the Kim family regime, and a possible barrier to imposed regime change.

North Korea's previous demarches forward, and then backward, have led U.S. and other interlocutors to understandable skepticism about its intentions

The good news about Iran is that, unlike the situation in North Korea, it does not

require reversing a case of proliferation that has already occurred. The bad news is that the mere possibility of an Iranian nuclear weapons capability might be more threatening to some states than a de facto North Korean nuclear weapons state. Iran's apparent aspiration to nuclear weapons status has already drawn warnings, including mock test flights over Iranian territory suggesting possible Israeli preemptive attacks on Iran's nuclear infrastructure. And Iran's well-documented connections to Middle Eastern terrorists raise the likelihood that the world's most destructive weapons might find their way into the hands of jihadists in Palestine, Lebanon, or other arenas of political meltdown and military opportunism.

The United States and Russia wish to avoid that outcome, but neither has a credible military option of its own at an acceptable political cost, and Moscow opposes such an option in any case. In this situation, China will oppose any measures that Russia firmly opposes, and China has its own economic interest in Iran. Tehran's negotiating strategy with the European contact group, Washington, Moscow, and the UN might be to spin out discussions until actual weaponization has been achieved. To achieve complete weaponization, Iran must not only have a sufficient supply of weapons-grade material (highly enriched uranium, or plutonium) but also be able to fabricate nuclear warheads that can be mated to suitable launchers (missiles or bombers).[5] The exact timing of an Iranian nuclear weapons "breakout" if Tehran is hell bent on going in that direction is a matter of some disagreement among the world's intelligence communities. Adding complexity to the calculations is that Tehran may opt for the status of a permanently "virtual" nuclear weapons state: a large civil nuclear power industry with the capability for near-term weaponization following a political decision to go that route.

Who Should Lead—and Why. Russia and the United States must be involved in these and other negotiations about nonproliferation, including possible measures of counterproliferation, because neither Washington nor Moscow can avoid their responsibility for leadership in nuclear nonproliferation and disarmament. They must lead because they own some 95 percent of the world's nuclear weapons, have the largest inventories of deployed and ready long-range nuclear charges, and have the longest history of managing nuclear operations without war. Failure on the part of the United States and Russia opens the door to not only nuclear weapons spread in the Middle East and Asia, but also to the possible first use of nuclear weapons in anger since Nagasaki—with all of its attendant consequences for world order, including the possible demise of the nonproliferation regime itself.

The importance of U.S. and Russian leadership in nonproliferation carries over into inevitable prominence in multilateral efforts toward nuclear disarmament. Disarmament will be accomplished, if at all, in two generic steps. First, it will be necessary to hold the roster of nuclear weapons states at the present number of de jure (NPT recognized) and de facto (acknowledged) powers. The door must be barred to Iran and slammed shut again on North Korea, to say nothing of additional members from those regions: Japan and South Korea in Asia, and Saudi Arabia and Egypt in the Middle East. To argue that drawing this line between internationally acceptable and unacceptable nuclear weapons states is unfair is a legalistic camouflage.

U.S. and Russian leadership in nonproliferation carries over into inevitable prominence in multilateral efforts toward nuclear disarmament

The history of the nuclear age is one of infinite regression: every "proliferator" including the first, the United States, was once a nonnuclear weapons state. China was once considered a rogue nuclear weapons state, and some leaders in both the United States and Russia recommended preemptive attacks against China's fledgling nuclear capabilities. Israel has never officially acknowledged its nuclear weapons capability, but unofficially has let the world know that it is prepared, in extremis, to use the nuclear weapons that it officially does not have. India, notwithstanding its Gandhian traditions, became a nuclear weapons state in order to balance against China, and Pakistan became a nuclear weapons state to balance against India.

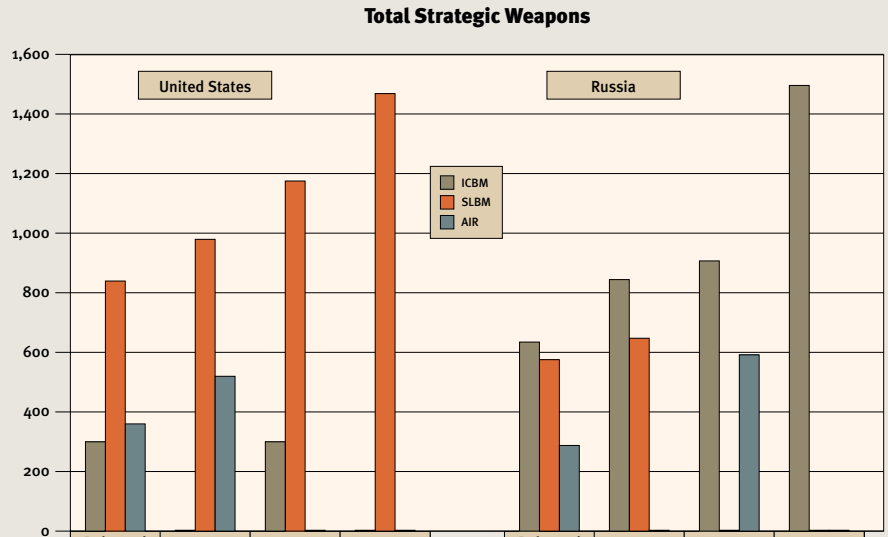
Second, the current nuclear weapons states must follow through on their obligations under the NPT to reduce their own numbers of deployed and stored nuclear weapons. However, this process of cooperative detoxification from nuclear addition will not be easy to accomplish. Nuclear weapons appeal to states for reasons of security (they feel threatened, or they wish to intimidate others), prestige (membership in elite clubs always carries its own cachet), and domestic politics (nukes can be symbols of national or cultural pride). In addition, all security dilemmas are not equal. A briefing on nuclear abolition might be received with more politeness in military staff colleges or think tanks in the United States or Britain than in Islamabad, New Delhi, or Pyongyang.

McGeorge Bundy's concept of "existential deterrence," although offputting to Cold War military planners and nuclear theorists who anticipated large-scale nuclear wars with acceptable political outcomes, has ironical resonance now, in the context of the risks attendant to unchecked proliferation in the second nuclear age. On one hand, a lot of deterrence and international diplomatic attention can be obtained if a state possesses even a few nukes (as North Korea has shown). This enhances the appeal of nuclear and perhaps other WMD as instruments for regional access denial to powers militarily inferior to the United States or its allies.

On the other hand, compared to any state except Russia, the United States has excess numbers of nuclear weapons with which to retaliate against a nuclear first use directed at its forces, allies, or homeland. In addition, the U.S. capability for "extended" nuclear deterrence, supplied to nonnuclear allies by virtue of America's nonpareil nuclear capabilities, dissuades friendly states who feel threatened from developing their own nuclear weapons capabilities. Therefore, while some reductions in U.S. and Russian strategic nuclear forces are obviously contributory to nonproliferation and disarmament, it is not self-evident that reducing U.S. and Russian nuclear forces to "minimum deterrents" of several hundred weapons, let alone abolishing those forces, would contribute to peace. (We argue the case for minimum deterrence in a later section.)

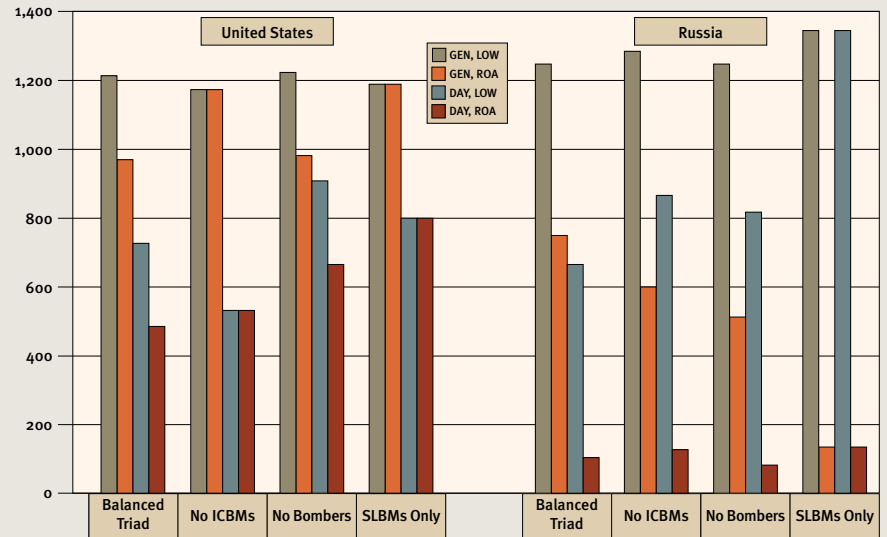
The unfortunate fact of strategic history is that for a peace to endure, someone or some group of states must enforce that peace.[6] Even if one passes this buck of enforcement to the "international community," it still requires the diplomatic collaboration and

Figure 1. U.S.-Russia Total Strategic Weapons (1,500 limit)



	United States				Russia			
	Balanced Triad	No ICBMs	No Bombers	SLBMs Only	Balanced Triad	No ICBMs	No Bombers	SLBMs Only
ICBM	300	0	300	0	635	845	908	1,497
SLBM	840	980	1,176	1,470	576	648	0	0
AIR	360	520	0	0	288	0	592	0

Figure 2. U.S.-Russia Arriving Retaliatory Weapons (1,500 limit)



	United States				Russia			
	Balanced Triad	No ICBMs	No Bombers	SLBMs Only	Balanced Triad	No ICBMs	No Bombers	SLBMs Only
GEN, LOW	1,213	1,173	1,223	1,191	1,248	1,285	1,249	1,347
GEN, ROA	970	1,173	980	1,191	750	601	513	135
DAY, LOW	726	532	908	798	665	865	817	1,347
DAY, ROA	483	532	665	798	104	129	82	135

concerted military action of the great powers in any particular international system. Peace is not self-sustaining. Accordingly, the task of disciplining a 21st-century international peace, with or without nuclear weapons, will fall to a relatively few well endowed major states with robust militaries and prodigious budgets, as well as states with regimes and peoples prepared to pay the prices of armed constabulary work. The North Atlantic Treaty Organization (NATO) military commitment in Afghanistan at this writing, tasked with counterinsurgency and counterterror missions while engaged in armed nationbuilding, makes the point. NATO is in Kabul and Kandahar because there is no other alliance or international body that will accept responsibility to deny future jihadists a safe haven for terrorist plotting—including the plotting of attacks with nuclear weapons.

Colin S. Gray has noted that "peace" has at least two principal meanings: that war is not taking place now, and that war is unthinkable and impossible in the exigent circumstances of international or regional order.[7] A true security community only exists in the second situation, as in NATO Europe presently. However, it is also the case that the international institutions, including nonproliferation regimes and supporting technologies (perhaps for inspections *and* defenses!), cannot carry the ball toward the objective of enduring peace alone. Shared cultural values and compatible, if not identical, readings of history are equally important, as are institutions and mechanisms for dissuasion, deterrence, and defense.[8] Soft power and hard power—both persuasion and kinetic capability—are coconspirators in the construction of durable peace with fewer, or no, nuclear armed states.[9]

Methodology

Context and Cautionary Notes. Earlier discussion reviewed aspects of the policy background pertinent to the relationships among Russian-American nuclear arms reductions, nonproliferation, disarmament, and missile defense. In this section, we use data analysis to pin down more specifically the policy alternatives suggested by the foregoing arguments. However, the dangers of quantification in this sort of enterprise must always be appreciated, and the task must be approached with modesty of ambition.

First, even after one or more post-START agreements have been negotiated, the terms may or may not be fulfilled within the 7-year interim between concluding a pact and implementing it. For example, a 7-year timeline for retrofitting Russian and American strategic nuclear forces for a post-START agreement brings us to 2016 or so. By 2016, Barack Obama could be finishing his second term as President, historically a "lame duck" period of Presidential influence. Even more political uncertainty looms if Obama is defeated for reelection in 2012 with regard to American foreign and security policy priorities in 2016 compared to now.

Second, on the Russian side of the Atlantic, 7 years is a long time in the policy-making process for national security, including nuclear arms control. Russia's economic performance between now and 2016 will

dictate much of its ability to modernize its conventional and nuclear forces. Assuming that Russia's economy performs at some middling level (less spectacularly than during the halcyon years of 2001 to 2007, but better than in the 1990s), the challenge for defense planners will be to balance the costs of military modernization and reform as between conventional and nuclear forces.

On one hand, the need for modernization and reform of Moscow's conventional armed forces is urgent. Russia's war against Georgia in 2008 was short and declaredly victorious, but it nevertheless exposed fatal weaknesses in its equipment, as well as command, control, and coordination of air and ground elements in battle. In addition, the promised transition from a mass mobilization-conscript enlisted force to one based largely on contract soldiers of higher quality depends on the continuing sluice of defense funding for personnel and for improved equipment.

On the other hand, Russia must also modernize its strategic and other nuclear forces for two reasons. First, Russian military doctrine emphasizes that nuclear forces must compensate, in deterrence and in warfighting, for weaknesses in conventional fighting power.[10] Second, Russia's leadership wants to preserve the apparent condition of essential equivalence in strategic nuclear forces, as between the United States and Russia, for the diplomatic leverage and political influence it conveys.

A third uncertainty, also with respect to Russia, relates not to the availability of resources for military reform and modernization, but to the proclivities of Russian military strategy and doctrine. The political and military leadership must drag the troglodytes in the General Staff and other resistant forces beyond the Cold War mentality that sees the United States and NATO as the main enemy driving military threat assessments. Unfortunately, current prime minister and past president Vladimir Putin has had some difficulty controlling the DNA remaining in his political mindset from his Cold War experiences and, even more important, from Russia's post–Cold War weakness compared to the West (especially in the 1990s).

Russia is not entirely to blame for the continuing hangover of Cold War retro perspectives on European security. NATO has permitted its democratic enlargement to extend to 28 member states, to the very

Figure 3. U.S.-Russia Generation Stability (1,500 limit)

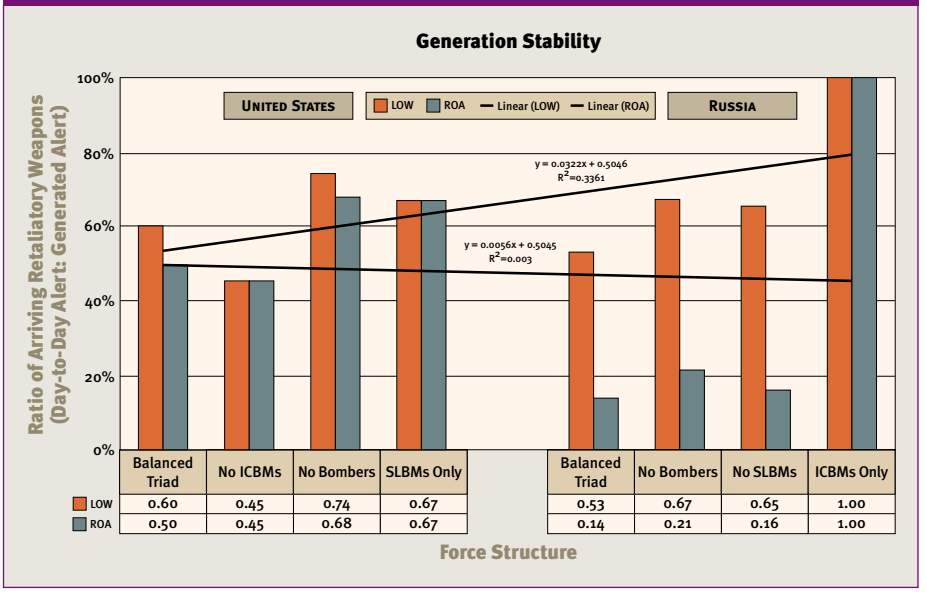
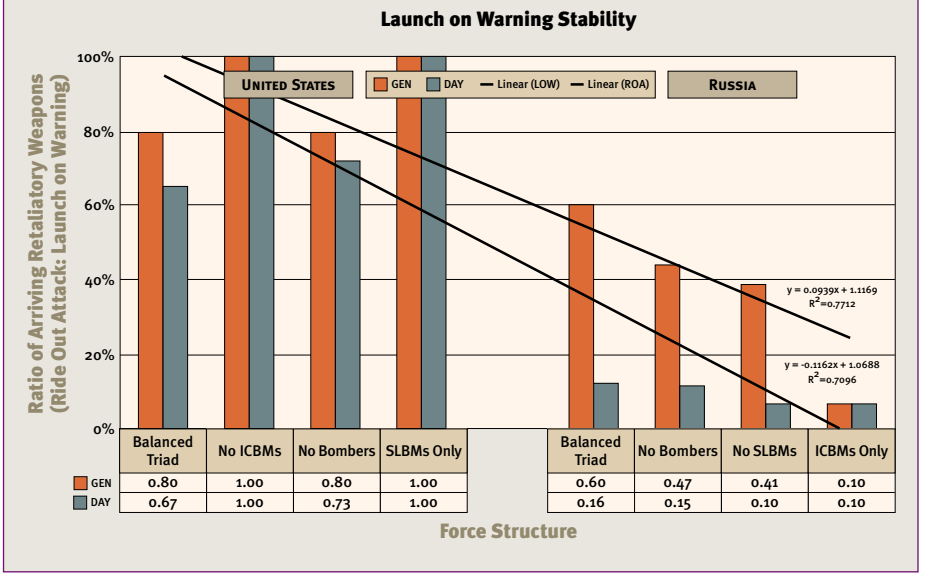


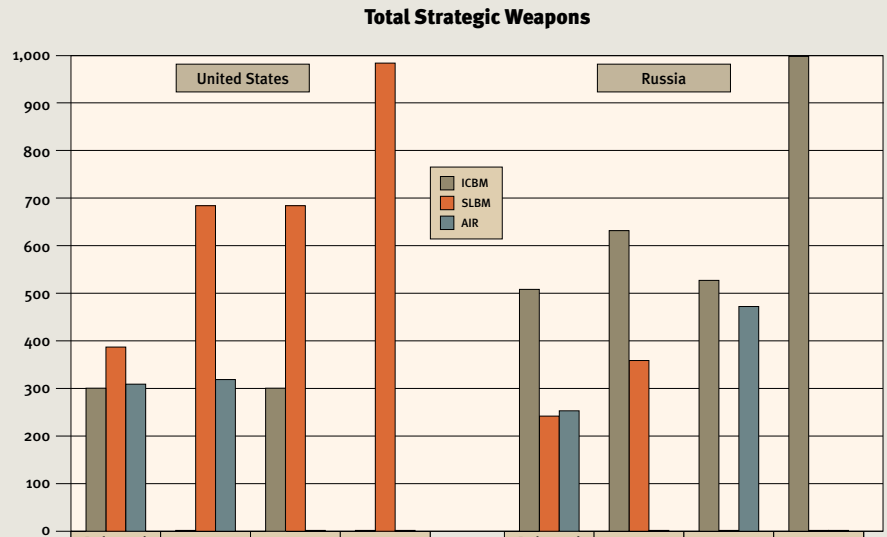
Figure 4. U.S.-Russia Launch on Warning Stability (1,500 limit)



borders of Russia, Belarus, and Ukraine. While this extension pleases advocates of democracy, it involves some problematical security issues. NATO is a military alliance with shared commitments to respond with armed force if any one member is attacked by a nonmember state. NATO, in this respect, is now committed to defend a belt of states from the Black Sea littoral through East Central and Western Europe, northward to countries that border on the Baltic and North Seas as well as the Arctic Ocean (leaving aside North America). Not content with this, the Alliance has now taken on the military responsibility for the armed nationbuilding of post-Taliban Afghanistan (an issue that may present unique challenges to Alliance unity and burdensharing).

Carpe Diem—New Politics versus Old Missiles. With the advantage of post–Cold War hindsight, some would argue that "deterrence worked," although whether from luck or management is a matter of remaining dispute for historians.[11] Twenty years after the end of the Cold War, it is time for rethinking nuclear war plans and the underlying concept of maximum deterrence as between Russia and America. Instead, the framework or context for further planning should be one of cooperative security, based on minimum deterrence

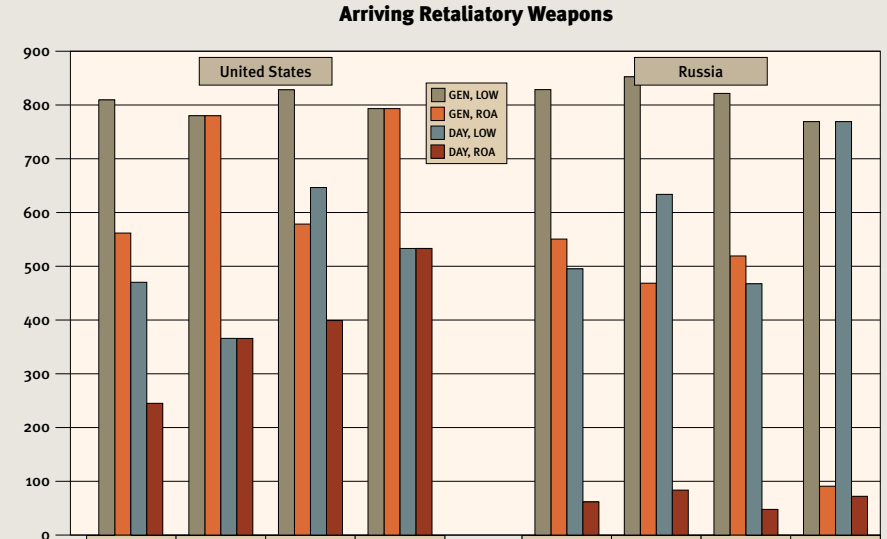
Figure 5. U.S.-Russia Total Strategic Weapons (1,000 limit)



	Balanced Triad	No ICBMs	No Bombers	SLBMs Only
ICBM	300	0	300	0
SLBM	392	686	686	980
AIR	308	314	0	0

Balanced Triad	No Bombers	No SLBMs	ICBMs Only
504	635	525	999
240	360	0	0
256	0	472	0

Figure 6. U.S.-Russia Arriving Retaliatory Weapons (1,000 limit)



	Balanced Triad	No ICBMs	No Bombers	SLBMs Only
GEN, LOW	812	785	826	794
GEN, ROA	569	785	583	794
DAY, LOW	483	372	642	532
DAY, ROA	240	372	399	532

Balanced Triad	No Bombers	No SLBMs	ICBMs Only
835	863	817	778
552	474	517	94
492	630	473	778
65	86	47	78

and forces configured for "retaliation only," and delayed retaliation at that.

If the United States and Russia were to move toward nuclear war plans based on minimum deterrence and not maximum, then changes in targeting, and therefore in strategy, are implied. Instead of seeking "prevailing" outcomes in a counterforce war or planning for massive attacks on population centers, the two states could emphasize infrastructure targeting, including electric power plants, refineries, transportation and communication networks and nodes, and other attributes of industrial and postindustrial modernity. Admittedly this target planning, if carried out, would still kill many people on either side, and for that reason, it would not be unimpressive as a deterrent. But it would target the sinews of economic security and public policy without gratuitous attacks on civilians for the purpose of terror per se.

Of course, target planners at U.S. Strategic Command and in the Russian Ministry of Defense will want "insurance"—war plans require options and branches for "just in case" situations. So one might suggest a target list for U.S. or Russian strategic nuclear retaliatory forces based on minimum deterrence with flexibility (see text box on page 102).

In addition, it is small consolation for Russia and the United States to accomplish progress toward minimum strategic nuclear deterrents, including the political and military reassurance related to those negotiations, if Russia retains its forward leaning posture on the possible first use of tactical or operational nuclear weapons in conventional conflicts. We can hope that Russia's improving conventional forces will gradually push its tactical nuclear options further back in its war plans and doctrinal formulations than is apparently now the case. But in addition, the United States and NATO should emphasize in discussions with Russian counterparts the futility of planning for fightable and winnable nuclear wars or, even worse, of anticipating nuclear first use in a conventional war as a measure of strategic "de-escalation."

Numbers and More. Does statistical analysis support the preceding arguments in whole or in part? Figures 1 through 8 provide a basis for summary assessments.[12] In figures 1 through 4, we project post-START U.S. and Russian strategic nuclear forces, under a limit of 1,500 deployed warheads. Figure 1 summarizes pertinent force structures for the two states. In figure 2, their numbers of second strike–surviving and retaliating warheads are calculated for four different mixes of land-based missiles, sea-based missiles, and heavy bombers, and under four alternate conditions of alertness and launch doctrine. Figure 3 displays the generation stability of U.S. and Russian forces by showing their ratios of arriving retaliatory weapons on day-to-day (DAY) alert, compared to generated alert (GEN), under two conditions of launch doctrine: launch on warning (LOW) and riding out the attack (ROA). Figure 4 summarizes the LOW stability for both states by showing their ratios of arriving retaliatory weapons when ROA is

compared to LOW, under conditions of generated alert compared to day-to-day alert.

In figures 5 through 8, the same procedures are repeated, in the same sequence, for Russian and American strategic nuclear forces downsized to within 1,000 deployed warheads, compared to the 1,500 ceiling in figures 1 through 4. An initially deployed force of 1,000 warheads would allow for a second strike–survivable force consistent with the targeting guidance, above, for a counter-infrastructure deterrent.

The results of the analyses summarized in figures 1 through 8 are as follows. U.S. and Russian strategic nuclear forces, within a maximum deployment limit of 1,500 warheads, or under a lower limit of 1,000 deployed weapons, can provide for assured retaliation inflicting socially unacceptable and historically unprecedented damage. In addition, even under the lower limit of 1,000 deployed weapons, both states would have sufficient numbers of retaliating weapons for strikes at targets other than populations or infrastructure. This finding holds true for all force structures and operational modes, with the possible exception of Russian forces under the worst case conditions of day-to-day alert and riding out the attack within a peacetime deployment limit of 1,000 weapons.

Are these U.S. and Russian forces sufficiently crisis stable to reassure both states against temptations toward hair-trigger alerts or launches on warning? The picture is mixed. Figures 3 and 4 for the 1,500-limit force, and figures 7 and 8 for the 1,000-limit force summarize the generation and LOW stability for U.S. and Russian forces. Each pair of bar graphs depicts the higher and lower numbers of arriving retaliatory warheads under relatively more favorable and less favorable conditions of alertness and prompt launch. A linear least squares regression model is then fitted to the data in each figure to establish a baseline for comparison between force sizes and among force types.

Although this dynamic analysis shows that U.S. and Russian forces at either 1,500 or 1,000 deployment levels might meet standards of *adequacy* in generation and prompt launch stability, each could improve its post-START *proficiency* in that regard. Russia's high dependency on land-based ICBMs for second-strike retaliation and its relatively anemic SLBM force create an operational dependency toward launch on warning. Russia's modernization of its SSBN

Figure 7. U.S.-Russia Generation Stability (1,000 limit)

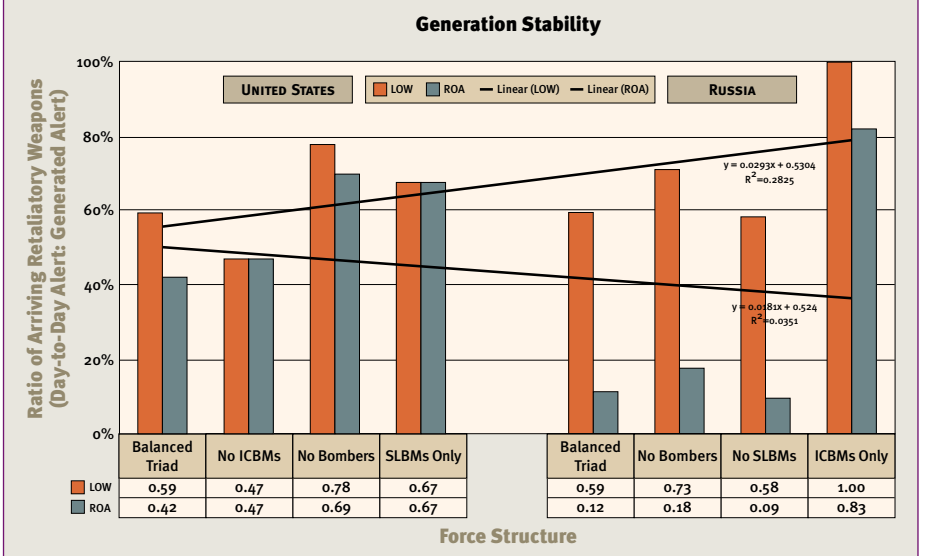
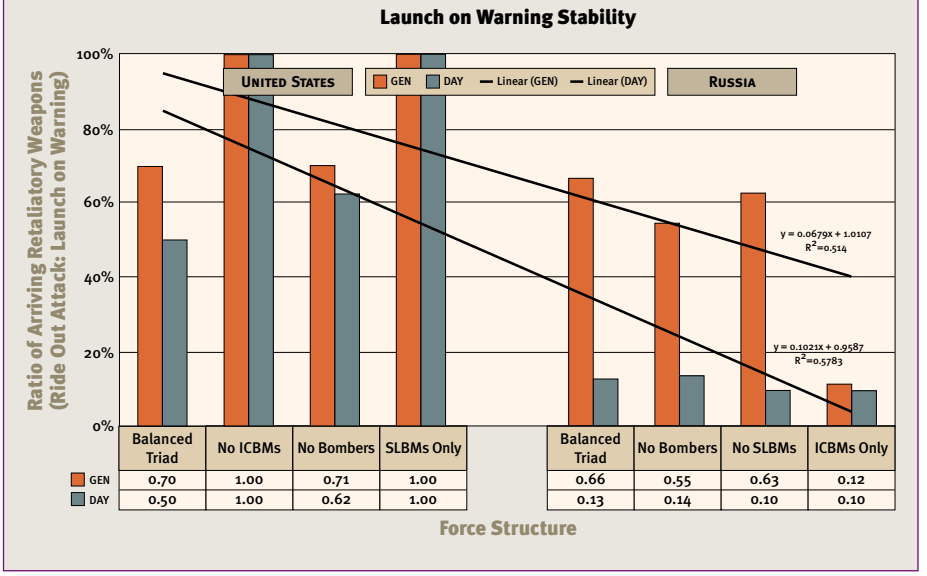


Figure 8. U.S.-Russia Launch on Warning Stability (1,000 limit)



fleet would be in the interest of both states. In turn, the U.S. Minuteman ICBM force is entirely silo based, dubiously first strike–survivable, and acts to attract additional Russian military aim points toward the U.S. homeland.

Would missile defenses counteract the idea of reducing American and Russian nuclear forces to mini-deterrents, as hypothesized above? On the available evidence, missile defenses for the next decade or so will have operational-tactical instead of strategic significance. They will not overturn the nuclear revolution or lead to a defense-dominant balance of terror. Russia's periodically expressed fear of a U.S. "last move" in the nuclear arms race, by combining preclusive antimissile defenses with a robust nuclear first strike option, is another hangover from the Cold War (that is, specifically, the Soviet reaction to the U.S. Strategic Defense Initiative). The Obama shift from the George W. Bush missile defense plan for Europe is consistent with the majority of post-Reagan visions of ballistic missile defense (BMD) as possible protection against limited strikes or accidental launches.

Leading U.S. defense officials are aware that an overly robust BMD directed against

Minimum Deterrent Forces Target Base: U.S.-Russia

- 250 infrastructure targets for each state, including those in urban-industrial areas
- 150 military force and command and control targets for each state, for prompt or delayed retaliation against opposed forces not used in the first strike
- 100 weapons kept in reserve, mostly ballistic and cruise missiles deployed on submarines, or mobile land-based ballistic missiles; this would serve as the unexpected contingency force (third parties jump into the war, for example); it would also serve as a support for negotiations to bring the war to a conclusion as soon as possible

Russia or China could provoke countermeasures, including an open-ended arms race. As General Kevin Chilton, USAF, commander of U.S. Strategic Command, warned in November 2009, "We have to be cautious with missile defense. Missile defense can be destabilizing, depending on how you array it."[13] But Chilton also supported the Obama missile defense plan and argued the case for missile defenses as necessary insurance against the possibility that some states, such as Iran and North Korea, might be undeterrable: "It's not clear that pure nuclear might or conventional might would deter them if they had the ability to [strike] the United States or an ally, a friend in the region, with a nuclear-capable missile."[14]

On the technology front, theater-wide and tactical missile defenses are already in place and improving, and they offer a possible arena for U.S.-Russian or NATO-Russian military and arms control cooperation.[15] A more problematical development for Russia would be a U.S. decision for the weaponization, as opposed to the militarization, of space, including the deployment of space-to-space or space-to-Earth strike weapons. The Outer Space Treaty does not prohibit the placement of nonnuclear weapons in space, and parts of the U.S. defense community regard space as the next "high ground" of warfare. A related uncertainty is the interest of China, among other states, in antisatellite warfare, including China's success in destroying one of its aging satellites in 2007 by means of a land-based ballistic missile launch.

Some American defense experts warn that the deployment of weapons in space could lead to an arms race in, or about, space, resulting in a deterioration of the U.S. ability to exploit space for military or other purposes.[16] However, the United States may not have the choice of abstinence in a military space race. The number of state "space powers" will grow in the present century, and some of them may seek status as U.S. military peer competitors. But space, as the negation of the negation that will make nuclear weapons obsolete, is more of a Hegelian construct than a technological reality.

The United States and Russia can modestly or even drastically reduce their numbers of deployed long-range nuclear weapons and launchers, while preserving the essential requirements for deterrence by credible threat of assured retaliation. This discovery may be small consolation. Greater risk comes not from the likelihood of a premeditated nuclear first strike by one state against another, but from the slippage of conventional warfare into a nuclear first use—whether in Europe or in Asia. In addition, some terrorists or other nonstate actors may acquire nuclear materials or technology and resist deterrence as a means of strategic communication.[17]

Continuing controversy can be expected about at least two issues. First, what is the value of excess weapons for "extended deterrence" provided to allies, compared to additional moon walks toward nuclear weapons status in the absence of a U.S. nuclear umbrella? And second, will missile defenses, if they improve and become more widespread as operational-tactical counterweights to short- and medium-range missiles, make deterrence stronger or weaker? The answers and outcomes for these questions will almost certainly be based, in part, on technology—but more on politics, including the perceptions of leaders and their motivating ideologies. **JFQ**

NOTES

[1] See remarks by Rose Gottemoeller, "The Long Road from Prague," Williamsburg, VA, August 14, 2009, available at <www.state.gov/t/vci/rls/127958.htm>.

[2] The White House, Fact Sheet: "The Joint Understanding for the START Follow-on Treaty," July 8, 2009, available at <www.whitehouse.gov/the_press_office/The-Joint-Understanding-for-The-Start-Follow-On-Treaty/>.

[3] Jennifer Loven, "Obama Outlines Sweeping Goal of Nuclear-Free World," Associated Press, April 5, 2009.

[4] Testimony of Celeste Wallander, Deputy Assistant Secretary of Defense for Russia, Ukraine, and Eurasia Policy, House Foreign Affairs Subcommittee on Europe, Washington, DC, July 28, 2009.

[5] Discouraging developments are noted in Joby Warrick, "Evidence of Iran's Nuclear Arms Expertise Mounts," *The Washington Post*, December 15, 2009.

[6] See Colin S. Gray, *War, Peace and International Relations: An Introduction to Strategic History* (London: Routledge, 2007), esp. 264–279.

[7] Ibid., 278.

[8] Ibid.

[9] Robert O. Keohane and Joseph S. Nye, *Power and Interdependence*, 3d ed. (New York: Longman, 2001), esp. 20–32.

[10] David Nowak, "Report: Russia to Allow Preemptive Nukes," Associated Press, October 14, 2009.

[11] As Colin Gray has argued, "It is possible that the human race survived the Cold War without suffering a nuclear cataclysm *despite*, rather than because of, the authoritative strategic theories and doctrines of the period." Gray, 217.

[12] Grateful acknowledgment is made to Dr. James Scouras for use of his AWSM@ model for drawing graphs and making calculations. He is not responsible for the analysis in this study, nor for any arguments or opinions. Force structures are the author's.

[13] General Kevin P. Chilton, USAF, quoted in Phil Stewart, "U.S. Missile Defenses May Backfire if Too Robust: General," Reuters, November 10, 2009, available at <www.reuters.com/articlePrint?article=USTRE5A94NH20091110>.

[14] Ibid.

[15] Dmitry Trenin, "Missile Defense Could Be the Silver Bullet," *Moscow Times*, November 3, 2009.

[16] Pertinent cautions appear in John Arquilla, *Worst Enemy: The Reluctant Transformation of the American Military* (Chicago: Ivan R. Dee, 2008), 93–99.

[17] See Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Times Books–Henry Holt, 2004), passim.

Drilling rig in Arctic Far North owned by Russian state oil company Rosneft

AP Images (Misha Japaridze)

Russia's Arctic Strategy

AMBITIONS AND CONSTRAINTS

By KATARZYNA ZYSK

In recent years, the Arctic region has emerged as an issue in world affairs, and its strategic importance is growing swiftly. Both challenges and opportunities from rapidly changing climatic conditions in the region have contributed to give the Arctic a place high on the domestic and foreign policy agendas of many key countries and organizations.

Russia stands out as one of the most determined Arctic players. A focus on the region features increasingly in Russian domestic and foreign policy discourse, particularly since Vladimir Putin's second presidential term. The importance of the Arctic to Russia on the one hand, and growing international interest on the other, has fueled Russia's determination to make its role as a central Arctic nation eminently clear by political, economic, and military means. In September 2008, Moscow endorsed the "fundamentals of state policy of the Russian Federation in the Arctic for the period up to 2020 and beyond," which was aimed at preserving Russia's role as a "leading

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Arctic power."[1] The adoption of the document has further highlighted the country's increased interest in the region. The policy paper, to date available only in Russian, has not received much analytical attention, unlike other key Russian documents.

This article addresses elements of Russia's plans for the Arctic in terms of economic policy and legal and military issues and devotes particular attention to the differences between the current Russian approach to security in the region and the attitudes presented in the previous Arctic strategy adopted in 2001.[2] Subsequently, it examines the geopolitical context of the Russian Arctic policy and sheds light on the country's foreign policy rhetoric and its impact on the regional security environment. Finally, it assesses prospects for implementation of the Russian policy objectives and draws implications of the findings for regional security.

Background

The Arctic policy document was published in March 2009, 6 months after it was signed. In contrast with the widespread media coverage that Russian activity in the Arctic was getting only a few months before, the document was posted by the authorities without further notice and publicity, and it was immediately filed in the archives section of the Russian Security Council Web site. Unlike the previous Arctic policy document of 2001, it refers sparingly to Russia's hard security interests and plans in the region. It also abstains from the assertive, belligerent rhetoric frequently used by Moscow in recent years.

Arctic Region

The Russian authorities have ambitions to address one of the biggest challenges in the country's approach toward the vast northern regions—the lack of a coherent strategy. Despite attempts to revive the state policy, its objectives, formulated in 2001, were not carried out with sufficient assiduity, something Russian politicians admit themselves.[3] Can the newly designed document make a difference?

the version of the document presented to the public reflects areas of particular interest and aspirations rather than presenting a consistent strategy to pursue objectives consciously and systematically over time

The fundamentals of the Arctic policy were designed under the auspices of the influential Russian Security Council, whose permanent members include the most important centers of power, such as the president, prime minister, ministers of interior, foreign affairs, and defense, and the directors of the Federal Security Service of the Russian Federation (*Federal'naya sluzhba bezopasnosti Rossiyskoy Federatsii*, or FSB) and the Foreign Intelligence Service. In drafting the document, most of the ministries and other parts of the executive and legislative branch responsible for various aspects of the Arctic policy have been involved, supported by leading experts and academics. The version of the document presented to the public sheds light on how the Russian authorities think about the Arctic and reflects areas of particular interest and aspirations rather than presenting a consistent strategy to pursue objectives consciously and systematically over time.

The document gives certain general policy guidelines. The final shape of the Russian Arctic policy, however, will depend on detailed programs formulated in the appropriate ministries and governmental agencies on the basis of the document and subsequently on their implementation—or lack thereof. As experience with the previous ambitious plans shows, achieving the goals may take longer than scheduled, if they are achieved at all.

Economic Development

The Russian leadership clearly emphasizes the importance of the Arctic to the coun-

try's wealth and competitiveness on global markets as a major source of revenue, mainly from production of energy. As much as 20 percent of Russia's gross domestic product (GDP) and 22 percent of the total Russian export is generated north of the Arctic Circle.[4] The region's economic promise lies primarily in its rich natural resources and its potential as an attractive maritime transit passageway. The ultimate objective of the state policy is to transform the Arctic into "Russia's foremost strategic base for natural resources" by 2020.[5]

The Arctic is clearly vital to Russia's relevance in world affairs as well. The role of energy reserves in strengthening the country's position and influence on the international stage has been emphasized in the national security strategy up to 2020 that was adopted in May 2009. According to Russian sources, up to 90 percent of the hydrocarbon reserves found on the entire Russian continental shelf is in the Arctic, with 66.5 percent located in its Western part, in the Barents and Kara Seas.[6] The project for Russia's energy strategy up to 2030 points out that resources located in the Arctic seas and in the Russian northern regions could compensate for dwindling deposits in existing fields based in Western Siberia, where a sharp decline in oil and gas production is expected in the next 20 years.[7] Consequently, one of the main goals of the Arctic policy is to increase extraction of the natural resources in the region.[8]

In September 2008, the Russian Security Council gave assurances that the government had earmarked "serious economic support" for implementation of the Arctic policy. However, prospects for developing the region under current economic circumstances are poor.[9] The Russian Ministry of Economic Development and Trade announced that the Russian GDP dropped 10.1 percent in the first 6 months of 2009. The World Bank assessed that Russia experienced in 2009 "larger-than-expected losses in output and employment, and a sharp rise in poverty." Although the Russian economy might grow 3.2 percent in 2010, experts warn that long-term sustainable growth can be achieved only with the introduction of comprehensive structural reforms, including diversification of the economy.[10]

The financial downturn and relatively low energy prices have affected investments in the Arctic and will slow the pace of development of the petroleum industry in the region. The Shtokman gas field in the Barents Sea and Prirazlomnoe oil field in the Pechora Sea will be Russia's first Arctic offshore fields in production. Due to a dramatic drop in exports and revenues, Gazprom suffered serious losses and accordingly cut its investment plans for 2010 by about 50 percent. In July 2009, the company officially confirmed that it was delaying the launch of Shtokman, one of the biggest offshore gas fields in the world and a major driving force for future Russian economic activity in the Arctic. Gazprom's partner in this project, French Total, stated in October 2009 that Shtokman would not be profitable with the current gas prices.[11] With relatively low oil prices, the Russian government may encounter similar problems in other onshore gas fields in the gas-rich Yamal Peninsula, which are to be developed first.

One of Russia's fundamental goals in the Arctic is the development of the Northern Sea Route (NSR) as a wholly integrated transportation link and a central element in maritime connections between Europe and Asia. The importance of the NSR has been highlighted in a range of recently adopted strategic documents, which point to a "sharply increasing role" of the NSR in connection with growing extraction of the Arctic's natural reserves. Moscow perceives this shipping channel as the sole means of transportation for the important industries located in Russian coastal and insular Arctic regions.

By 2015, Russia aims to have established and developed an infrastructure and system of management of communications for the NSR to secure Euro-Asiatic transit. The expected increase in Russian petroleum activity will lead to a sharp boost in the level of shipping through the NSR westward, mainly from the Barents and Kara Seas. Some Russian forecasts expect that the cargo flowing through the NSR may reach a volume of 5 to 6 million tons, and increase to 13 to 15 million tons by 2015. For

Sailor inspects *USS Texas* near North Pole

U.S. Navy

comparison, at its peak in 1987, the transport volume through the NSR reached 7 million tons, while in the 1990s it diminished gradually to a relatively stable 1.5 to 2 million tons.

To meet the requirements of the increased economic activity in the Arctic and to ensure restructuring of the volume of maritime freight, Russia recognizes as a prerequisite the development of modern harbors with appropriate infrastructures and the acquisition of new nuclear-powered icebreakers together with assets for an air support and rescue fleet.[12] Although Russia still has the world's largest and most powerful icebreaker fleet, limited maintenance and construction capacity has caused general deterioration since the 1990s. The seven active (and world's only) nuclear-powered icebreakers constructed in the 1970s and 1980s are aging quickly, and all except one will be decommissioned by 2020.[13] Viacheslav Ruksha, head of Atomflot, which manages the icebreakers, warned that Russia will face a "collapse" of these capacities in 2016–2017 if a new generation nuclear-powered icebreaker is not ready by that time.[14]

The Russian authorities have taken steps to address the problem and charged the State Nuclear Energy Corporation (Rosatom) with development of a long-term plan for construction of new vessels. Rosatom's director, Sergei Kirienko, argues that Russia has to build at least three to four third-generation icebreakers in the next few years to maintain the country's potential in the Arctic. The first was due to be launched in 2010. Nevertheless, the economic downturn has left its mark on this project. In November 2009, it was reported that funding for the new vessel will only figure in the state budget for 2011. Given that construction of one icebreaker takes 5 to 6 years, with the current pace of rejuvenating the fleet, Russia's capacity to support its economic activities in the region is likely to be substantially reduced by 2020, making implementation of the Arctic strategy less realistic.

Legal Questions

Closely intertwined with the importance of the Arctic to Russia are the country's efforts to settle the outer limits of the continental shelf in the region beyond 200 nautical miles, noted in the Arctic document as a top priority to be accomplished in the period 2011 to 2015.[15] In this context, the government is clear that the partition of the Arctic will be carried out entirely within the framework of international law.

Russia filed its first request with the United Nations (UN) Commission on the Limits of the Continental Shelf in 2001, but the board demanded more evidence. Consequently, Moscow attaches importance to scientific research in the region (geological, geophysical, cartographical, hydrographical, and other) since the results will play a decisive role in the accomplishment of the legal process.[16] On the basis of the research, Russia intends to develop a competitive economic activity within extraction and transportation of energy resources in the region.

Unlike the 2001 strategy, the Russian government highlights in the new Arctic document its longstanding position on the legal status of the NSR, thus reflecting its expected increasing significance. The document states

Russia has to build at least three to four third-generation icebreakers in the next few years to maintain the country's potential in the Arctic

AP Images (RIA-Novosti, Alexei Druzhinin)

Prime Minister Putin speaks with foreign investors about developing untapped gas region in Yamal Peninsula

that the NSR is a "national transportation route" under Russia's jurisdiction. Navigation via this sailing channel is to be carried out in compliance with Russian laws and the country's international agreements. In the federal statute of July 31, 1998, the NSR is defined as "a historically existing national unified transport route of the Russian Federation in the Arctic." It includes navigation via straits within and between the Russian Arctic archipelagos, including the Vilkitski, Shokalski, Dmitri Laptev, and Sannikov Straits. Russia labels these straits as part of its internal waters.

The Russian claim to jurisdiction over the NSR is based on article 234 of the UN Convention on the Law of the Sea. The article "gives coastal states the right to unilaterally adopt and enforce non-discriminatory laws and environmental regulations in their Exclusive Economic Zones (EEZs) where ice coverage and particularly severe climate conditions cause exceptional hazards to navigation, and where pollution could cause major harm to the ecological balance."[17] According to the Russian regulations, all vessels intending to enter the NSR should give advance notification to Russian authorities and submit an application for guiding, which implies paying a fee for using the route.

The question of the legal status of the NSR complicates the fact that it is not a single shipping channel, but a series of different shipping lanes stretching between 2,200 and 2,900 nautical miles, depending on ice conditions.[18] According to Russian experts, "the integral nature of the NSR as a transport route is not affected by the fact that individual portions of it, at one time or another, may pass outside boundaries of internal waters, territorial waters and EEZ, i.e., it may pass into the high seas."[19] The NSR may thus include sea lanes running beyond Russia's EEZ as long as part of the voyage includes waters under undisputed Russian jurisdiction.

Other important actors in the region may regard the Russian interpretation as somewhat controversial—particularly the United States, which considers the straits of the NSR as international and thus subject to the right of transit passage. This position was recently confirmed in the U.S. Arctic region policy document adopted in January 2009.[20] On different occasions, Russia has warned that attempts by other countries to change the NSR's legal status and transform it into an international transit corridor would be in conflict with Russia's national interests. As the importance and value of this transport channel are likely to increase in the future, the question of its legal status may become a matter of contention.

Military Issues

The Russian authorities highlight the need to make necessary preparations for the security challenges that may derive from the expected increase in economic and other activities in the Arctic. Hence, they devote much attention to development of search and rescue capabilities, surveillance, and navigation systems to provide safety for and control of the economic, military, and ecological activities.[21] One of the goals of the Russian policy is the creation of a comprehensive security system by 2015, including early warning, prevention, and crisis management capabilities. Russia also emphasizes a need for cooperation with other Arctic countries and defines strengthening efforts to establish a unified regional search and rescue system as a strategic priority.[22]

Russia stresses the importance of a continued military presence as essential for securing national interests in the Arctic, although Russia's defense policy in the region is discussed in the Arctic document only in vestigial form. The document vaguely states that Russia needs to maintain a "necessary combat potential" in the North and reveals plans to establish special Arctic military formations to protect the country's national interests "in various military and political situations."[23] The Russian authorities, however, underscore that the main purpose of such military preparations is to combat terrorism at sea, smuggling, illegal migration, and unsustainable use of aquatic biological resources. Hence, the FSB is to play a central role in protecting national security interests in the region. A strong emphasis has been put on the development of a coastal defense infrastructure and advanced technological capabilities, including satellites and radars. In September 2009, the FSB announced that Arctic formations were established in border guard units in Arkhangelsk and Murmansk and were patrolling along the NSR for the first time in many years.

Canadian Forces sovereignty patrol, 500 miles north of Arctic Circle, receives fuel

U.S. Army (Leonardo Torres)

The document has thus to some extent confirmed information released by representatives of the Russian Ministry of Defense in mid-2008 concerning adjustments being made to the combat plans and military organization of the three military districts bordering the Arctic: Leningrad, Siberian, and Far Eastern. They announced also that an Arctic *spetsnaz* (special purpose forces) would be formed to support Russia's northern policy. Russian military and political leaders have argued that defense of national interests from the northwest strategic direction has become more relevant and pointed also at other existing motivations behind such military preparations. They have noted the international

attention to the military potential and energy resources of the Arctic as factors calling for an immediate strengthening of Russia's positions in order to secure the region.

Russia's approach to Arctic affairs has been of two minds and thus sometimes confusing and difficult to interpret. Self-assertive and occasionally aggressive rhetoric has alternated with more conciliatory signals and practical compliance with international law. The tone of the Arctic document is moderate and stands in contrast to the harsh language previously used by Russia concerning various activities in the region, in particular in the military field. It not only refrains from belligerent language, but it also omits issues that could be contentious or alarming. Apart from the few vague indications concerning military plans, references to the hard security sphere in the region are absent. The Russian authorities clearly highlight the importance of bilateral and multilateral cooperation in the region and the need to strengthen good relations with neighboring countries, in particular the "Arctic five."[24]

Russia's approach to Arctic affairs has been of two minds and thus sometimes confusing and difficult to interpret

The difference in approach to hard security in the Arctic is striking in comparison with the 2001 Arctic document, where issues of military security were understood in terms of zero-sum game and classical Realpolitik, assuming that states, particularly great powers, are in principle mutually hostile and competitive. The document stated that "all kinds of activity in the northern regions are in the highest degree connected to providing of national security." It urged steps to "actively counter strengthening of military infrastructure and enlargement of military activities" in the region by other countries and actors.[25] The document underlined the military strategic importance of the region to Russia's defense and pointed out that almost 20,000 kilometers of the state border were in the Arctic Ocean and its protection and defense imposed particular problems.[26]

Security of the border remains prominent in the new Arctic document. However, it approaches these issues in relation to soft security challenges, with the discussion of the hard security sphere being nearly absent. Despite this change of tone, the region has retained its special importance to Russia in a more traditional definition of security.

The military strategic importance of the Northwest with its direct and easy access to the world's oceans has paradoxically been strengthened since the Cold War due to the geopolitical changes that limited Russia's access to the Baltic and the Black Seas. The Arctic is still an important home base and a suitable operational area for the Russian navy, in particular for its most powerful part, the Northern Fleet and the sea-based component of the Russian nuclear triad. The nuclear deterrent has maintained the key role in Russia's military strategy, strengthened by its weakness in conventional forces. Its continued importance has been corroborated by the priority given to modernization of the Russian nuclear arsenals, including the building of eight fourth-generation *Borei*-class ballistic missile submarines planned to be completed by 2015.

Russia's intensifying of naval and air activity in the Arctic has taken place simultaneously with its increased and global focus on the region's energy potential. At the same time, in particular since the end of President Putin's second term, the military has been given an enhanced role in efforts to return to the world stage as a great power. The resumption of strategic bomber flights along the Norwegian coast and in the Pacific in 2007 and the presence of the Northern Fleet in the Arctic on a regular basis in 2008 have been visible expressions of this recent trend. The increased activity has been a result of the normalization of Russian military training after a long period of stagnation. However, Russian authorities have at least initially connected symbolic and political significance to the intensified military activity, which was accompanied by an assertive rhetoric.

In the Russian assessment, there is no imminent threat of direct aggression against Russian territory or a large-scale military confrontation in the region. Nonetheless, Moscow does not rule out the possibility of competition for hydrocarbon reserves developing into small-scale tensions involving use of military power. Its security strategy states that the continental shelf in the Barents Sea and other parts of the Arctic are among regions where a potential for an increase in rivalry over energy resources is particularly high. A conviction that the contest for natural reserves may in the future pose a threat to Russia has been widespread in military circles. The General Staff in June 2009 described the "struggle for energy resources in the Arctic" as one the most important challenges and argued that the region should be included in the new revised European security architecture.

Although Russian military activity in the Arctic has received less publicity and attention in the official rhetoric in 2009 than in preceding years, it has not become less important. The number of flights of strategic bombers along the Norwegian coast, despite the economic hardship, has been kept at a similar level as in 2008.[27] Russia has also continued to conduct large-scale military drills in the region, such as Ladoga–2009, which involved all units of the Leningrad Military District and some units of the Siberian Military District, interior troops, border guards, and the Northern and Baltic fleets. In compliance with the Russian threat perception, one of the training scenarios included protection of oil and gas installations in northwest Russia.

Among Moscow's military plans, which once realized could increase its striking power in the Arctic, is a major naval build-up aimed at strengthening blue-water capabilities, including, among others, 5 to 6 aircraft carrier squadrons, 20 new multipurpose corvettes (*Steregushchii* class), and 20 frigates (*Admiral S. Gorshkov* class). With few exceptions, however, these plans so far are only ambitions. Despite the clearly increased military activity and improved combat potential of the armed forces, these developments should be seen against the background of a still weak military. The pace of modernization has been slow, although a radical characteristic of military reforms being implemented, aimed at moving away from a mass mobilization army to a permanent readiness brigade model, reveals a new quality in the Russian approach. Much of these plans will depend on development in the Russian economy and the leadership's ability to transform and modernize it.

Geopolitics

As the example of the Russian Arctic security policy discourse has shown in recent years, the manner in which communication transpires matters and has the force to shape the reality. The sometimes tough Russian talk and behavior, including not only verbal

statements but also military posturing, have attained one of its goals and reminded the world that Russia remains a key factor for political developments in the region. On the other hand, responses from the world have shown that this strategy has had the potential to harm rather than promote Russia's interests abroad.

One of the outcomes of the Russian policy has been to strengthen the international focus on military security in the Arctic. The occasionally aggressive rhetoric has lowered the threshold of sensitivity in other states toward Russia's moves in the hard security sphere and has raised, particularly in polar states, the question of their own military presence and preparedness—an outcome that Russia can hardly see as being in its interest. The perception of Russia as a potentially unpredictable player and security concern has been strengthened by the experience of the Russo-Georgian war in August 2008, which triggered security assessments in a range of countries. One example is that even the few modest sentences in the Arctic policy document concerning Russia's military plans immediately spurred speculation about "militarization" of the region. Russian authorities have repeatedly rebuffed such accusations and given assurances that Moscow would regulate Arctic issues through negotiations and with respect for the rules of international law.

Canada has been among the most vocal states in articulating its intentions to upgrade its military capabilities with regard to tasks in the Arctic. Commenting on the ground-sea-air joint Operation *Nanook*, Defence Minister Peter MacKay stated that the operation was intended "to very clearly send a message, and to announce with authority, that we intend to use the Arctic . . . and that our presence there is going to continue to expand."[28] The intention to strengthen military capabilities in the Arctic has also been signalled in Denmark. A defense plan for the period 2010–2014 approved in June 2009 envisages establishment of an Arctic military command structure and task force.

One of Russia's major foreign policy objectives in recent years has aimed at limiting the presence of the North Atlantic Treaty Organization (NATO) in the proximity of Russia's borders, included in the Arctic. But the outcome in the region has been quite the opposite. As stated in October 2009 by NATO Supreme Allied Commander Europe Admiral James Stavridis, the Russian "assertive conduct in the Arctic and a muscle-flexing" were among the factors "grabbing the attention of increasingly wary NATO leaders."[29] He described the High North as an area of growing strategic concern.

a radical characteristic of military reforms being implemented, aimed at moving away from a mass mobilization army to a permanent readiness brigade model, reveals a new quality in the Russian approach

The sometimes assertive responses from the other Arctic states stimulate Russia's counterresponses and strengthen the rationale for an increased military presence. Such mutually reinforcing dynamics may in the longer term lead to a stronger militarization

Diver from University of Washington prepares to recover torpedo during U.S. Navy Ice Exercise 2009

U.S. Navy (Tiffini M. Jones)

of the region, potentially creating new sources of tensions. Russian authorities have repeatedly expressed their discontent with the focus on hard security in the Arctic and warned against its militarization, indicating measures it might take to address the challenges implied by such developments. According to Chief of the General Staff Nikolai Makarov, those measures would be reflected in assignments given to the Northern and Pacific Fleets and the sea-based strategic nuclear deterrent.

The apparent adjustments in the Russian Arctic rhetoric—less publicity for the military posturing and stronger emphasis on conciliatory positions—may provide better ground for closer cooperation and facilitate diplomatic progress. Focus on common interests and areas where parties involved need each other can be a way of improving international relations in the region. One of the areas where international cooperation is welcomed by Russia (and is unavoidable in order to address challenges emerging in the simultaneously hostile and highly vulnerable environment) is marine safety, search and rescue, and crisis management. None of the Arctic countries has the complete spectrum of assets needed to cover the whole geographic area and respond on their own to asymmetrical and soft security challenges. Apart from being necessary, such cooperation has a strong confidence-building potential, still in shortage in the region as the recent military and security dynamics have shown.

Tentative Conclusions

While it is still too early to assess whether the increased Russian focus on the Arctic translates into a more coherent approach and what chance the Arctic policy objectives have of being implemented, it has become clear that the already announced delays, mainly due to financial constraints, will make it difficult if not impossible to achieve the strategic goals in the indicated timeframe.

In a long-term perspective, the widely expected growing global demand for gas and oil, combined with dwindling reserves in existing fields, will argue for exploration of new deposits in the North and offshore. Climate change will most probably continue, opening the Arctic to increased economic and industrial activity. Together with their geopolitical implications, these developments argue for Russia's continued efforts to strengthen its presence, in accordance with reasoning expressed by Deputy Prime Minister Sergei Ivanov: "If we do not develop the Arctic, it will be developed without us."[30] Nonetheless, expecting the vision of the Russian Arctic as a thriving economic hub for energy production and transpolar maritime transit to come true by 2020 may be too optimistic.

The Arctic document has confirmed what Russian leaders have reiterated with increasing intensity: the region's importance, first and foremost in economic and security dimensions. One conclusion to be drawn from the ambitious economic projects is that Russia, for purely material reasons, has an interest in maintaining the region as an area of international cooperation and in preserving its most important asset as the country's future economic engine—its stability.

At the same time, the growing importance of the Arctic both to Russia and the world is generating new driving forces for the Russian military presence. As economic activities increase, Russia will need to protect the significant assets that it is placing in the region. Thus, its military presence is likely to increase further in the future. Moscow's continued reliance on the nuclear deterrent, together with the focus on enhancing global naval power projection capabilities, indicates that the military strategic importance of the Arctic to Russia will remain high for the foreseeable future. **JFQ**

NOTES

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[6] *Osnovy*, 2001.

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Member nation representatives at Association of Southeast Asian Nations Summit

AP Images (Barbara Walton)

By WALTER C. LADWIG III

INDIA AND THE BALANCE OF POWER IN THE ASIA-PACIFIC

When Indian Prime Minister Manmohan Singh made an official state visit to Washington last November, he encountered a markedly different political landscape. The past year has seen a notable shift in Indo-U.S. relations from the heady days when the Bush administration pursued a strategic partnership with India with the enthusiasm of an ardent suitor. Despite the praise and platitudes that President Barack Obama heaped on both India and Mr. Singh during the visit, it is clear that China occupies pride of place in America's present Asia policy. President Obama himself has stated that "the relationship between the United States and China

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will shape the 21st century," while prominent Democratic (referring to the party, not the political philosophy) foreign policy thinkers have suggested that a "G–2" condominium with Beijing should become the new arbiter of global affairs.[1] Although the present focus on China is understandable given the global economic crisis and the deep interconnection between the U.S. and Chinese economies, it is nevertheless myopic and potentially harmful to long-term regional security and stability for the United States to overlook the increasingly important role India is playing in the Asia-Pacific region.

Over the past 18 years, New Delhi has undertaken a concerted effort to direct its foreign, economic, and military policies eastward. What began as economic cooperation with the nations of Southeast Asia has expanded into full-spectrum engagement with the major powers of East Asia, such as Japan and the United States. A steadily expanding economy, paired with a growing partnership with key regional actors, positions India to have an impact on the emerging security architecture of the Asia-Pacific. This article explores India's regional emergence in four parts. Discussion of India's eastward orientation begins with Southeast Asia before moving on to East Asia, Australia, and the United States. After exploring potential constraints on India's ability to act as an extra-regional power, the article concludes with a discussion of the impact India can have on the future regional order in the Asia-Pacific.

Look East, Phase I

With the end of the Cold War and collapse of the Soviet Union, India lost its main trading partner, arms supplier, and source of subsidized oil. At the same time, the end of the bipolar struggle between the superpowers freed Asia from many of the ideological divisions that had defined it in previous decades. Desiring a way to create strategic political and economic ties with individual nations in Southeast Asia while simultaneously developing closer ties with the Association of Southeast Asian Nations (ASEAN), Prime Minister P.V. Rao launched the "Look East" policy in 1991. Rather than being simply an economic policy, Look East marked "a strategic shift in India's vision of the world and India's place in the evolving global economy."[2]

Over the past 16 years, India has steadily expanded and strengthened its relationship with ASEAN. In 2002, the first ASEAN-India summit was held, and the following year, India became one of the first non–Southeast Asian nations to accede to ASEAN's Treaty of Amity and Cooperation, which commits India to the principles of nonaggression and noninterference in the internal affairs of partner nations. India's economic engagement with the region has expanded by an order of magnitude since 1990 as its annual trade with ASEAN nations grew from $2.4 billion to over $38 billion by 2008, with a goal of expanding bilateral trade to $50 billion by 2010. As a result of these increasing ties, India has reached an agreement with ASEAN to create a free trade zone by 2012 that would link 1.6 billion people in an area with a combined gross domestic product (GDP) of over $1.5 trillion.

With the policy supported by successive Bharatiya Janata Party and congress-led governments, Look East has become an institutionalized component of India's foreign policy. This approach has met with success because it achieves important foreign policy goals for both India and its partners. Increased engagement in the region is part of New Delhi's overall effort to heighten its presence in an area where its sphere of influence overlaps with that of Beijing. For ASEAN members, India provides an alternative that allows them to reduce their economic dependence on both China and Japan. Not surprisingly, Singapore's foreign minister has noted that "we see India's presence as being a beneficial and beneficent one to all of us in South-east Asia."[3]

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Engagement with Southeast Asia has not been limited to economics. Since 1991, India has periodically held joint naval exercises with Singapore, Malaysia, and Indonesia in the Indian Ocean. In subsequent years, it has undertaken bilateral exercises with Vietnam, Thailand, and the Philippines. In 1995, this military engagement matured into the annual Milan series of naval maneuvers that India conducts with ASEAN nations in the Bay of Bengal. Not only do such exercises showcase India's naval capabilities, but they also contribute to enhanced interoperability with regional navies and can positively shape perceptions of shared security concerns. India has also dispatched its vessels on forward presence missions designed to "show the flag" in the South China Sea, a maritime domain that China has previously claimed exclusively as its own, and beyond. In support of such operations, Indian ships, including the aircraft carrier INS *Viraat,* have made high-profile port calls in cities such as Manila, Jakarta, Singapore, and Saigon as recently as last year, while bilateral exercises have been undertaken in the South China Sea with the navies of Singapore, Vietnam, and the Philippines.

To facilitate power projection into the Asia-Pacific, the navy is upgrading its base network. A second naval base on India's eastern shore is being constructed near Vizag, 30 miles south of the existing Eastern Naval Command headquarters. The navy has also announced plans to bolster its forces deployed in the east, which officials connect to India's broader eastward focus. In 2005, a Far Eastern Naval Command was established at Port Blair in the Andaman Islands, located midway between the Bay of Bengal and the Straits of Malacca, a key chokepoint linking the Indian Ocean to the South China Sea. Airfields in the Andamans bring the straits, as well as much of the South China Sea, within the operational radius of India's frontline fighter aircraft. While notionally intended to facilitate control over the eastern straits, which are vital to the trade routes of the Indian Ocean, the navy's new eastward orientation enables India "to be a significant player in the emerging Asian balance of power," in the words of Raja Mohan.[4]

The navy's engagement with Southeast Asia is not simply about power projection; India has also attempted to cultivate soft power by providing regional public goods—such as humanitarian assistance and security for key sea lines of communication—in a manner befitting a regional hegemon. Following the 2004 tsunami, the navy mobilized 32 ships and over 20,000 naval personnel to evacuate casualties, as well as provide emergency sources of power and water to the peoples of Sri Lanka, the Maldives, Indonesia, Thailand, and Malaysia. In the wake of the navy's high-profile role in escorting U.S. military supply ships and other high-value vessels through the straits after the 9/11 attacks, India has begun to conduct coordinated anti-piracy exercises in the northern approaches

The Distribution of Power among the Major States in the Asia-Pacific

While measuring a state's power is an art in and of itself, it is possible to do a first-order assessment of the relative magnitude of power among a group of states. Kenneth Waltz, the doyen of structural realism, has suggested that states can be assessed on six relevant factors: population size, military strength, economic strength, resource endowment, political stability, and competence of government.[1] The following tables indicate the relative performance of seven countries (Australia, China, India, Indonesia, Japan, the United States, and Vietnam) that have been identified as actual or potential great powers or regional hegemons of a subregion of Asia based on these six factors.

Table 1. Population Size

Country	Population	World Rank
China	1,338,612,968	1
India	1,166,079,217	2
United States	307,212,123	3
Indonesia	240,271,522	4
Japan	127,078,679	10
Vietnam	86,967,524	13
Australia	21,262,641	54

Source: CIA World Factbook 2009 (Washington, DC: Central Intelligence Agency, 2009).

Table 2. Military Strength

Country	Defense Budget (US$M)	Percent of World
United States	552,568	43.1
China	62,100	4.8
Japan	41,039	3.2
India	26,513	2.1
Australia	20,216	1.5
Indonesia	4,329	<.01
Vietnam	3,709	<.01

Source: International Institute of Strategic Studies (IISS), *Military Balance 2009* (Washington, DC: IISS, 2009).

Table 3. Economic Strength

Country	Gross Domestic Product (US$M)	World Rank
China	1,338,612,968	1
India	1,166,079,217	2
United States	307,212,123	3
Indonesia	240,271,522	4
Japan	127,078,679	10
Vietnam	86,967,524	13
Australia	21,262,641	54

Source: International Monetary Fund, World Economic Outlook Database, October 2009.

Table 4. Resource Endowment

Country	Oil Reserves (barrels)	World Rank	Gas Reserves (cubic meters)	World Rank
United States	20,970,000,000	13	6,071,000,000,000	6
China	19,600,000,000	14	2,265,000,000,000	15
India	5,700,000,000	22	1,075,000,000,000	24
Indonesia	3,800,000,000	25	2,659,000,000,000	13
Vietnam	3,300,000,000	29	192,500,000,000	45
Australia	1,500,000,000	35	849,500,000,000	26
Japan	44,120,000	78	20,900,000,000	75

Source: CIA World Factbook 2009.

Table 5. Political Stability

Country	Percentile Rank
Australia	85.2
Japan	79.4
United States	68.4
Vietnam	56.5
China	33.5
India	16.7
Indonesia	15.8

Source: "Political Stability," World Bank Worldwide Governance Indicators 2009.

Table 6. Competence of Government

Country	Percentile Rank
Australia	96.7
United States	92.9
Japan	89.1
China	63.5
India	53.6
Indonesia	47.4
Vietnam	45.5

Source: "Government Effectiveness," World Bank Worldwide Governance Indicators 2009.

Table 7. Relative Composite State Rankings

	Population	Military Strength[2]	Economic Strength	Resources	Political Stability	Government Competence
United States	3	1	1	1	3	2
China	1	2	3	2	5	4
Japan	5	3	2	7	2	3
Australia	7	5	5	5	1	1
India	2	4	4	4	6	5
Indonesia	4	6	6	3	7	6
Vietnam	6	7	7	6	4	7

Although crude, this assessment of relative state power across Waltz's six dimensions does reveal a rough distribution of power among the major states of Asia. The United States clearly remains the predominant power in the Asia-Pacific. After a notable gap, China assumes the number two spot. Another sizeable gap separates China from Japan, Australia, and India, which are all clustered around each other. An even larger gap in power separates this trio from Indonesia and then Vietnam.

NOTES

[1] Kenneth N. Waltz, "The Emerging Structure of International Politics," *International Security* 18, no. 2 (Autumn 1993), 50.

[2] The relative ranking of military strength is based on defense expenditure. If the size of the armed forces is used instead, the results are largely the same, although India moves ahead of Australia and Japan. However, the general pattern of a sizeable gap between the United States and China, followed by another notable gap between China and India, Japan, and Australia, and then another gap separating these three from Indonesia and Vietnam remains.

to the straits with both the Indonesian navy and the Royal Thai Navy.

Through its engagement, in the form of increased trade and military cooperation, India enhances the ability of Southeast Asian nations to avoid domination by any single extra-regional power. Its closest regional ties are with Singapore, which has been a strong proponent of India's engagement with ASEAN. These strong ties led to a 2003 defense cooperation agreement that made the city-state India's most important bilateral partner in the region. Then–Indian chief of naval staff Admiral Arun Prakash suggested that the defense ties with Singapore are "possibly the closest that we have ever been to any country."[5] The closeness of these links can be seen in the fact that personnel from the Singaporean army, navy, and air force all train at facilities in India, and weapons systems for their fleet are tested at India's Chandipur firing range.

India also has a long history of cooperation with Vietnam, having supported its intervention in Cambodia in 1979, and bilateral trade with Southeast Asia's fastest growing economy reached $3 billion in 2008. In recent years, the rise of China has highlighted shared strategic concerns between the two countries, as both have fought wars and have outstanding territorial disputes with Beijing. In 2000, regular discussions between the two countries' defense ministers were established, which set the stage for joint naval exercises. In July 2007, Vietnam and India agreed to "diversify and deepen" their relationship by expanding trade and undertaking collaboration on civilian nuclear energy, as well as seeking to "strengthen cooperation in defense supplies, joint projects, training cooperation, and intelligence exchanges."[6]

Historically, Indonesia has supported India's enhanced engagement with ASEAN. Indian officials recognize Indonesia as "the largest and most influential member of ASEAN," while Indonesian analysts note that "working with India would be a way for Indonesia to help ASEAN nations check the power of China in the region."[7] In 2005, India and Indonesia agreed to establish a strategic partnership to both deepen and broaden their political, economic, and security ties, while a follow-on accord opened the possibility of jointly producing military hardware.

Although not as robust as its links to Singapore, Vietnam, and Indonesia, India has also enhanced its economic and security ties with Malaysia, Thailand, and the Philippines as a part of Look East. India is Malaysia's largest trading partner in South Asia and has provided training for its fighter pilots, submarine personnel, and special forces; its dry docks have refit several Malaysian naval vessels; and the two navies have undertaken joint exercises. For its part, Malaysia's foreign minister has called for a "strategic alliance" with India.[8] Thailand has shared Singapore's interest in encouraging India's involvement in Southeast Asia. On the security front, India and Thailand have entered into agreements

Treasury Secretary Tim Geithner with Indian Prime Minister during state visit

AP Images (J. Scott Applewhite)

to share terrorism-related intelligence and tactics, while a 2005 memorandum of understanding between the Indian navy and the Royal Thai Navy established procedures for coordinated maritime patrols. In 2006, India signed a defense agreement with the Philippines that would deepen maritime cooperation and allow bilateral military exchanges. Indo-Philippine ties are relatively immature but can be expected to grow.

India's economic and military engagement with Southeast Asia is perceived as a tangible manifestation of its strategic intention to compete with China for influence. As Raja Mohan and Parag Khanna argue, India's efforts send a message that it "will not simply cede primacy [in Southeast Asia] to China."[9] Such a competing influence can be beneficial for the nations of Southeast Asia, which have historically had difficulty preserving autonomy in the presence of great powers. However, without a legacy of dominating the region, India does not provoke this same anxiety. Its increasing economic and military links broaden the range of powers influencing Southeast Asia, which allows local states to adopt hedging strategies versus China—developing ties with New Delhi while maintaining relations with Beijing.

India's economic and military engagement with Southeast Asia is perceived as a tangible manifestation of its strategic intention to compete with China for influence

Look East, Phase II

After its initial success with ASEAN, India moved into phase two of its Look East policy, which encompasses a region "extending from Australia to East Asia."[10] Indian officials envision playing "an ever increasing role" in this "extended neighborhood." Simultaneously, New Delhi is expanding the range of issues on which it engages East Asian nations from trade to wider economic and security issues, representing a further "strategic shift in India's vision" that was predicated on the understanding that "developments in East Asia are of direct consequence to India's security and development."[11]

China. As the discussion of Southeast Asia indicated, a key factor underlying India's pan-Asian engagement is its complicated relationship with China. On the one hand, economic cooperation and enhanced political ties benefit both nations. Bilateral trade between the two Asian giants stands at nearly $50 billion per year. China has recently displaced the United States as India's largest trading partner while India is China's ninth largest market. On the political front, the nations share a desire to see the international sphere transition to a multipolar structure in which each country has an increased voice in global affairs. Military relations between the neighbors have also steadily improved, with an agreement in 2006 to begin undertaking joint military exercises, as well as high-level exchanges between their armed forces.

Balancing these positive developments, however, is longstanding friction. Their 1962 war inflicted a humiliating defeat on India and created an unresolved border dispute, which Beijing has pursued with increasing belligerence in recent years. Furthermore, China has been a principal supplier of weapons technology, both conventional and nuclear, to Pakistan, India's South Asian bête noire. On the political front, India is jealous of the status accorded to China by its seat on the United Nations (UN) Security Council and its recognition as an official nuclear power under the Nuclear Non-Proliferation Treaty.

The potential for discord between the two countries can be clearly seen in the energy sector. Beijing is desperate to secure hydrocarbon resources for its own expanding economy, while India is increasingly reliant on similar energy sources. In recent years, China has beaten India in head-to-head competition for oil assets in Kazakhstan, Ecuador, Nigeria, and elsewhere. China's efforts to secure its access to overseas energy resources have brought it into India's back yard. Oil from East Africa and the Persian Gulf must cross the Indian Ocean to make its way to market in China. In an effort to secure its interests, China has helped establish a network of ports and partnerships with countries in the littoral region, including nations such as Pakistan, Burma, and Sri Lanka that have traditionally had complicated relations with India. China's support for Pakistan, as well as its encroachment into the Indian Ocean, is viewed by some Indian analysts as part of a coherent strategy to encircle India and confine its influence to South Asia. Not surprisingly, India's foreign minister recently described the rise of China as one of New Delhi's foremost security challenges.[12] Similarly, a 2008 Pew attitude survey found that a plurality of Indians believe that China's economic growth is bad for India, while a super-majority views China's increasing military power negatively.[13] This marks a noticeable deterioration from just a few years ago.[14]

While India's current policy toward China is predicated on the belief that economic engagement and wary cooperation can occur between the two countries, as India's eastward focus demonstrates, Delhi's engagement with China is coupled with efforts to lay the groundwork for a more robust strategy should this pragmatic approach fail to deliver results. Indian leaders frequently state that they are not seeking to contain China, but their policies indicate that they are hedging their bets. India's efforts to expand its presence in the Asia-Pacific can be seen as a strategy that develops economic linkages and security cooperation with key states in the region wary of Beijing's power, while still maintaining mutually beneficial economic ties with China.

East Asia. Despite Chinese efforts to curtail its influence, India gained political acceptance in its bid to be recognized as an Asia-Pacific power in 2005 when it was invited to attend the inaugural East Asia Summit—an effort some believed would be the stepping stone to the formation of an "East Asian Community" to mirror the European Union. Support for India's inclusion in the East Asia Summit came from Southeast Asian nations such as Singapore, Indonesia, and Thailand, as well as Japan and South Korea, all of whom championed India's participation despite objections from China.

As with Southeast Asia, India has paired political ties with defense diplomacy to enhance its presence in East Asia. It conducted joint naval maneuvers with the South Korean navy in 2000, 2004, and 2006. Although often overlooked, the South Korean navy possesses a sizeable complement of surface combatants and submarines, comparable to the navies of France and the United Kingdom. May 2007 marked the first ever visit by a South Korean defense minister to India. This was coupled with efforts to expand trade ties, as well as a foreign policy and security dialogue that promotes bilateral defense cooperation. New Delhi and Seoul are united in their

concerns about the proliferation of nuclear weapons and missile technology in their respective subregions. These worries converge on China, which has aided both Pakistan and North Korea with their weapons of mass destruction (WMD) programs.

India has fashioned an even stronger strategic partnership with Japan. Unlike many countries in Asia, India bears no historical animus toward the Japanese. Tokyo and New Delhi's shared interest in restraining China's influence in Asia has led to a strengthening of defense ties. Although it has been increasingly common to focus on China as the leading power in East Asia, it should not be forgotten that Japan's economy is larger than China's or India's, and with a defense budget that exceeds $40 billion, its military is among the most advanced in the world. In particular, Japan's Maritime Self-Defense Force is easily the most capable indigenous navy in the Asia-Pacific.

On a geopolitical level, India and Japan can both be considered potential rivals to China for primacy in the broader region. In an effort to forestall competition from its neighbors, China has attempted to prevent both countries from gaining equal international status by opposing expansion of the UN Security Council and resisting the legitimization of India's nuclear arsenal. Such clumsy efforts have only driven New Delhi and Tokyo closer together. This is not to suggest that ties between India and Japan are motivated strictly by realist geopolitical considerations. Among the rising powers of Asia, both Japan and India are established democracies, while China remains an autocratic state. As an editorial in Japan's largest daily newspaper argued, "India is an extremely important partner with which Japan can shape a new international order in East Asia because the two countries share common values of freedom and democracy."[15]

Following an agreement to strengthen cooperation between their navies, India and Japan conducted reciprocal naval exercises in the Indian Ocean and the Sea of Japan in 2005. A year later, the countries established a framework to transform their relationship into a strategic partnership, which was followed by a 2008 Joint Declaration on Security Cooperation that the two nations claim will form an "essential pillar for the future architecture" of security in Asia.[16] This marks only the second such security agreement that Japan has entered into. Commenting on the significance of enhanced Indo-Japanese ties, then–Prime Minister Shinzo Abe suggested that this would become Japan's "most important bilateral relationship in the world."[17] Given the importance of Japan's security alliance with the United States, this is a bold pronouncement.

Despite the great public enthusiasm, there are reasons to be more circumspect when examining Indo-Japanese ties. Economic engagement has failed to keep pace with the development of security ties. Moreover, some critics contend that the much-hyped 2008 joint declaration does little to substantively move Indo-Japanese ties beyond their previous state. In addition, the newly elected government of Prime Minister Yukio Hatoyama has signaled an intention to review Japan's traditional regional security posture, which could be a prelude to a sharp break from the foreign policies of the past decade. Nevertheless, given the negligible diplomatic or security engagement between India and Japan during the many decades of the Cold War, the deepening of Indo-Japanese ties during the past 10 years can be considered an important development.

China's support for Pakistan, as well as its encroachment into the Indian Ocean, is viewed as part of a coherent strategy to encircle India and confine its influence to South Asia

Australia. While looking East, India has also turned its gaze southward. Indo-Australian relations have recovered significantly from the diplomatic crisis perpetuated by India's 1998 nuclear tests. In recent years, Australian leaders have recognized the important role India can play in the security architecture of the wider Asia-Pacific region.[18] Bilateral agreements have emphasized "common interests on a number of important issues, including the Asia-Pacific and Indian Ocean regions."[19] This recognition led to a series of agreements on joint naval exercises, enhanced maritime security cooperation, increased military exchanges, and joint training. Nuclear issues are an important aspect of Indo-Australian security ties; Australia has 40 percent of the world's uranium reserves. While the government of John Howard decided to extend de facto recognition of India's nuclear status, the Labor government of Kevin Rudd has been somewhat coy, despite its strong rhetorical commitment to nuclear nonproliferation. This has led some Australian analysts to believe their country will eventually supply uranium to India. This uncertainty notwithstanding, Indo-Australian security ties remain more robust than either nation's bilateral defense cooperation with China.

The United States. India's increasing role in the Asia-Pacific has been firmly supported by the region's premier naval power—the United States. This has facilitated India's relations with the nations of the region because many Southeast Asian nations, as well as Japan, South Korea, and Australia, have close ties to America. India and the United States share a range of concerns on key security issues such as the spread of Islamic radicalism, WMD proliferation, and the rise of China, about which there is a noteworthy similarity between Washington's and New Delhi's objectives. Both nations have adopted "congagement" strategies that seek to gain from economic exchange with China while maintaining sufficient military power to deter threats to their key strategic interests posed by its rising power. Furthermore, Indian leaders joined former President George W. Bush in advocating the spread of liberal democracy as a key element of long-term stability in Asia.

From the Bush administration's vantage point, India was poised to become a key player in world affairs. Former Secretary of State Condoleezza Rice portrayed India as "a rising global power that can be a pillar of stability in a rapidly changing Asia," and the United States has encouraged New Delhi to take a greater role in the security of the Asia-Pacific region.[20] Similarly, in its 2006 Quadrennial Defense Review, the U.S. Department of Defense identified India as a "key strategic partner," which puts it in the same category as America's traditional Asia-Pacific allies.[21] As a result, the Bush administration's policy was to "help India become a major world power in the 21st century."[22] A cornerstone of this effort was the U.S.-India nuclear deal allowing unprecedented civilian nuclear cooperation. In the defense realm between 2001 and 2008, the United States and India conducted over 40 joint military exercises, including one of the largest multilateral naval exercises ever held

in the region, Malabar 07–2, which featured 3 aircraft carriers, 28 surface vessels, 150 aircraft, and over 20,000 personnel from India, the United States, Japan, Australia, and Singapore. Trilateral naval exercises featuring the United States, India, and Japan off the coast of Japan in 2007 and 2009 expanded the range of maritime cooperation and further widened the scope of Indo-U.S. engagement in the Pacific. Moreover, a 10-year defense pact signed in June 2005 advanced intelligence-sharing and training. It also allowed military technology transfers, missile defense collaboration, and arms sales, as well as opening the door to joint weapons production. In the amphibious realm, the sale of an *Austin*-class Landing Platform Dock to the Indian navy made an important contribution to its power projection capability. More recently, Lockheed Martin won a $1 billion contract to provide the Indian air force with Super Hercules C–130J military transport aircraft, and several American firms are bidding to supply the military with fourth-generation fighter jets and light helicopters.

Despite these deepening ties, there remain significant differences between India and the United States over a host of foreign policy issues ranging from Pakistan and relations with Iran to broader issues of global economic governance. Moreover, the Obama administration has yet to demonstrate that it shares its predecessor's enthusiasm for putting India at the heart of America's vision for Asia. Instead, early evidence strongly suggests that China fills that role, with Obama's statement in July during Chinese Vice Premier Wang Qishan's visit to Washington that "the relationship between the United States and China will shape the 21st century" fueling Indian suspicions that Washington seeks a G–2 condominium with Beijing as the new arbiter of global affairs. These fears have been compounded by the U.S.-China joint statement released during Obama's November visit to Beijing that acknowledged a role for China in managing India-Pakistan bilateral relations, which strongly suggests that India is now viewed merely as a player in its immediate neighborhood rather than a future power in Asia. Although we are little more than a year into the new administration, such developments are viewed ominously in New Delhi—with at least one pro-American Indian politician noting that "there is a pall of gloom over the [Indo-U.S.] relationship."[23]

India's increasing role in the Asia-Pacific has been firmly supported by the region's premier naval power—the United States

Indian and Chinese officials discuss boundary disputes

AP Images (Saurabh Das)

Constraints on Presence

Before moving on to an evaluation of India's impact on the regional order in Asia, it is necessary to look at the factors that could impede its ability to develop as an extraregional power. At the grand strategic level, there are questions about India's ability to articulate and implement a coherent long-term national security strategy. Scholars both inside and outside the country have found that its political establishment has difficulty approaching defense and foreign policy issues in a systematic manner, which could hinder its ability to integrate its political, military, and economic efforts to pursue its interests in the Asia-Pacific.

In terms of military power, India is still at an early stage in developing its ability to project and sustain its presence beyond the Indian Ocean. Its defense budget ranks ninth in the world and is only the fifth largest in Asia behind the United States, China, Japan, and South Korea. Although defense spending only accounts for 2.3 percent of GDP, the defense budget could face pressure from demands for increased social spending—particularly in light of the present global recession. While India has recorded impressive economic growth over the past two decades, authorities estimate that between 27 and 42 percent of the population lives in poverty.[24] In comparison to other Asian powers, the average Indian has about half the income of his Chinese counterpart and a tenth that of a Japanese citizen and even compares unfavorably to citizens of Indonesia and the Philippines. Having long been defined by its poverty, India's standing as an Asian power depends in part on internal development.

the average Indian has about half the income of his Chinese counterpart and a tenth that of a Japanese citizen

A third challenge to New Delhi's ability to focus on the Asia-Pacific comes from its immediate neighborhood. Although successive governments have taken active steps to move attention away from a single-minded focus on Pakistan, Islamabad's continued support for terrorism within India and the real threat of state failure there necessarily draw India's attention westward. Similarly, the continued economic and political challenges facing the small, fragile states on India's periphery, such as Bangladesh, Sri Lanka, and Nepal, will require attention that could otherwise be given to developments in the Asia-Pacific.

Though not insurmountable, the political establishment faces many obstacles in its efforts to marry effective leadership with the political will to overcome the challenges posed by military capacity, economics, and immediate regional stability. Nevertheless, despite the handicaps, India is poised to influence Asian dynamics in important ways.

The Balance of Power

The emergence of new powers such as India and China, and the increasing "normalization" of Japan as a political-military actor, appears ready to transform Asia; however, the emerging security structure is unclear. Despite America's military and political power, its ideal regional order—based on the rule of law and democracy—is not necessarily attractive to all states, while at the same time, China has yet to make an attractive case for a Sino-centric order. In such a dynamic environment, it is possible for other Asian powers to play an influential role in shaping regional security dynamics. The question of regional leadership in the so-called Asian Century is a matter for not just the United States and China alone, but for Japan, India, and the nations of Southeast Asia as well.

An expanding economy and increasing security ties with Japan, Australia, and the United States, as well as key Southeast Asian nations, are positioning India to have an impact on the distribution of power in Asia. While the foreign policy establishment may ultimately prefer to see the present unipolar system replaced with a multipolar one in which India is a major power, they prefer *Pax Americana* to a Sino-centric world order. As a result, India's Asia-Pacific policy has sought to enhance its own regional role while simultaneously seeking to hedge in its relations with its northern neighbor—benefiting from economic engagement while cultivating relationships with China-wary nations to match Beijing's perceived attempts at strategic encirclement in the Indian Ocean.

India's impact in shaping Asia's future can be explored through an examination of possible future regional orders. The first configuration is regional hegemony exercised by either the United States or China. A regional hegemon is not simply the preponderant regional power, as America is in Asia today, but also a state so powerful that "no other state has the military wherewithal to put up a serious fight against it."[25] China's expanding power and its possession of a nuclear arsenal render America's present regional position something short of hegemony, whereas America's presence in Asia prevents China from achieving that status. Even if the United States were to significantly draw down its presence, Japan and India together, who both oppose Chinese hegemony, possess enough combined power to prevent Beijing from achieving a hegemonic position in the maritime Asia-Pacific.

With hegemony unlikely in Asia in the medium term, are either multipolar or bipolar structures likely to emerge? India would prefer a multipolar power structure. However, given the current preponderance of American power, and the gap between the relative power of Japan, China, and India, it is unlikely that Asia will see the emergence of multiple poles of approximately equal power in the medium term. Furthermore, multipolarity suggests independence and balancing among the major states, which does not necessarily characterize U.S.-Japan, U.S.-India, or Indo-Japanese ties. Similarly, the gap between American and Chinese power makes a balanced bipolar structure unlikely since significant actors such as Japan, India, and Australia, as well as some less powerful Southeast Asian states, are more likely to support the United States (the stronger power) rather than China (the weaker one).

As a result, the most likely configuration appears a continuation of the present: a hierarchical order with American preponderance. Under such conditions, regional stability is preserved when the dominant power gains support for the status quo from other significant powers in the hierarchy that are satisfied with the present regional structure. This situation facilitates the maintenance of a power gap between the dominant state in the hierarchy and its supporters on the one hand and a would-be challenger on the other, reducing the likelihood of great power conflict.

India recognizes the value of the existing U.S. alliance system in providing stability in the Asia-Pacific region and shares

the preferences of many states in East and Southeast Asia for maintaining American preponderance via economic, political, and military engagement. Although India lacks the ability to independently shape the regional order, it makes its presence felt by integrating with the other major democracies and expanding its ties with China-wary nations. In pursuing strategic ties with nations with traditionally difficult relations with China—such as Vietnam, Indonesia, Japan, and the United States—New Delhi lends its military and economic power to a security order that can enhance stability by presenting Beijing with a series of structural constraints that may diffuse the negative aspects of China's rise and persuade it that attempts to dominate the region are unlikely to succeed. In pursuing this course, India is not subordinating itself to another power or seeking to be a junior partner in any coalition; rather, it is pursuing its own agenda as an emerging great power, whose interests coincide with those of the United States and its regional allies. Although it is possible that India's patterns of behavior and alignment described herein could be reversed at some point, the realities of geography, regional structure, and power dynamics in Asia make that unlikely.

The eastward focus that has been a cornerstone of India's foreign policy since the end of the Cold War is part of a broader effort to assert itself on the world scene. Over the past 18 years, India has evolved from a regional power in South Asia to an actor in the Asia-Pacific. Maintaining a significant gap between the power of the United States and its allies on the one hand and China on the other can help to deter Beijing from mounting a costly bid for regional hegemony, which, successful or not, would increase instability throughout the Asia-Pacific. It is in India's interest, as well as that of many states in East and Southeast Asia, to avert a power transition in the region. Insofar as India continues to contribute to that effort through its strategic partnerships with key regional actors and growing trade and investment links, it will play an important role in shaping dynamics in the Asia-Pacific. Since it shares many key security concerns with the United States, such as dealing with the spread of Islamic fundamentalism, preventing the return of the Taliban in Afghanistan, stabilizing Pakistan, and precluding the domination of Asia by a resurgent China, India has the potential to become America's most important partner in Asia. The Obama administration would be well served to actively harness this convergence of interests to solidify a relationship that can help the United States favorably shape an increasingly strategic region of the world. **JFQ**

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The Department of the Treasury

Ensuring Prosperity *and* Security

By STEPHANIE R. AHERN

ATMs with no cash. Resource-rich governments unable to pay soldiers' salaries. Debilitating unemployment and inflation. A decade ago, most U.S. military leaders were unconcerned about solving these issues. Far outside the military's core competencies, these were someone else's problem. Today, experience has taught us the complex and potentially caustic nexus of the security and economic realms. We now ignore these matters at our own peril.

The Department of Defense (DOD) is not alone in dealing with these concerns. The Department of the Treasury is an underleveraged, poorly understood interagency partner, specializing in macroeconomic and financial matters. An interagency featherweight—800 people are in its headquarters building—Treasury punches far above its weight class. However, heavyweights have inherent advantages in some fights. As a result, the better DOD can understand and work with this national security partner, the greater will be the Nation's prosperity and security.

Who Is Treasury?

The Treasury Department is the executive agency responsible for promoting America's economic prosperity and ensuring its financial security.[1] As anyone watching the news knows, this mission demands coordination with other economic and financial regulators, policymakers, and Wall Street entrepreneurs throughout the United States and abroad. Treasury also serves as the President's chief advisor on domestic and global economic and financial issues. This includes matters involving sustainable development, improved governance, stability of the global economy and financial system, and preventing the U.S. financial system from being used to fund illicit activity.

The Department has two primary components. First, Treasury's equivalent of the Pentagon, its Departmental Offices, resides next door to the White House. Defense personnel will most likely deal with professionals from this headquarters. Second, Treasury is responsible for its operating bureaus: the Internal Revenue Service, Mint, Bureau of Engraving and Printing, Financial Crimes Enforcement Network, Alcohol and Tobacco Tax and Trade Bureau, Bureau of Public Debt, Community Development Financial

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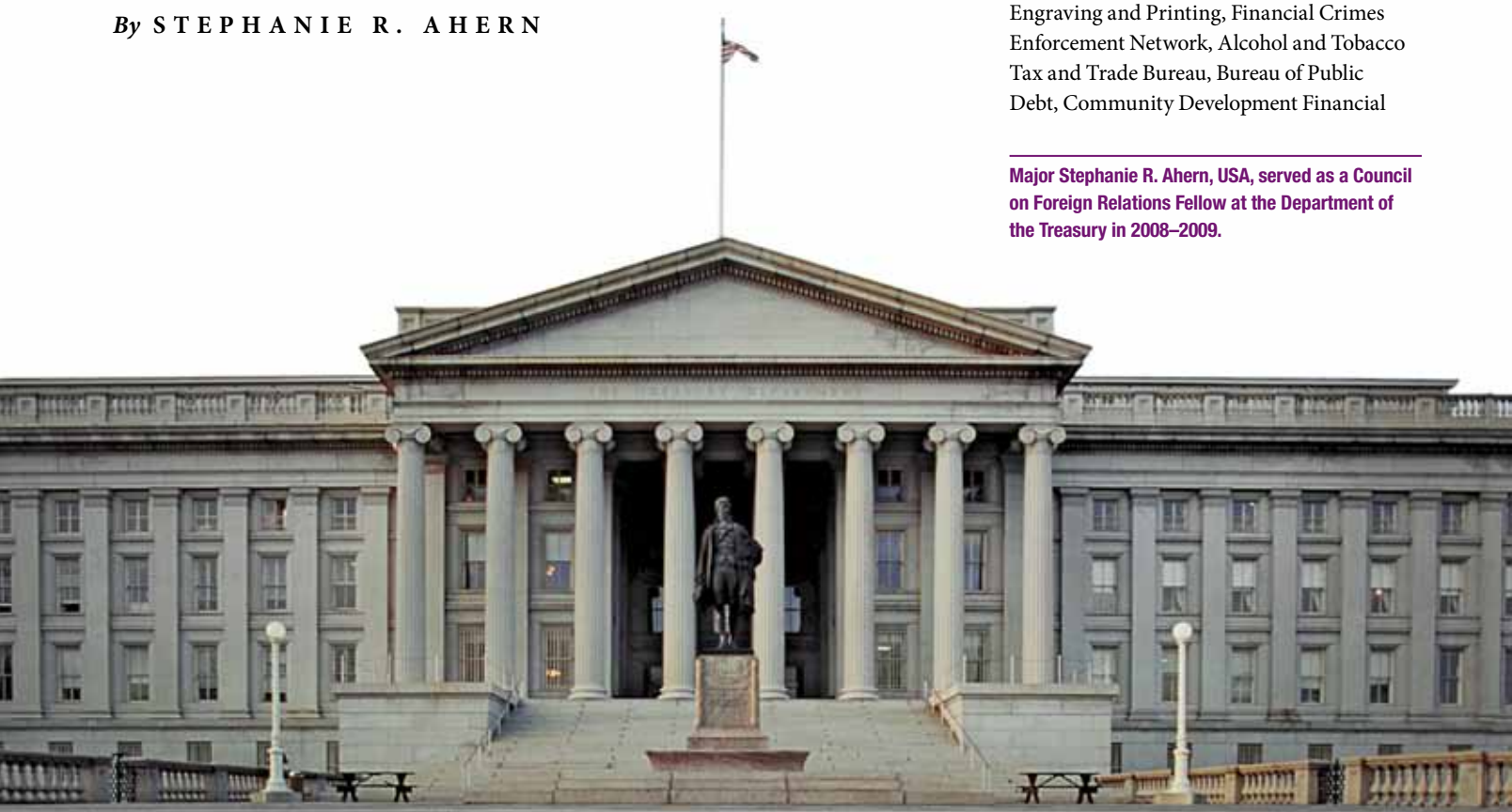

Institution Fund, Financial Management Service, Inspector General, Treasury Inspector General for Tax Administration, Office of the Comptroller of the Currency, and Office of Thrift Supervision. In total, the bureaus employ 98 percent of all Treasury employees.[2]

Long gone are the headquarters' money-laden vaults and frantic bank tellers. Instead, the headquarters houses the equivalent of three military "Services"—Domestic Finance, International Affairs, and Terrorism and Financial Intelligence—albeit at a fraction of the military Services' size. First, the Office of Domestic Finance deals with U.S.-based finance and banking matters, which are at the center of the current financial matters we see on the nightly news. It helps develop policies and guidance on financial institutions, financial market oversight and regulation, Federal credit policies, debt management, and state and local finance. It also oversees programs such as the deterrence of U.S. currency counterfeits and the Terrorism Risk Insurance Program. Most prominently, the office develops and coordinates Treasury's policies on legislative and regulatory issues affecting financial stability, including the Troubled Assets Relief Program (TARP).

Second, the Office of International Affairs (IA) specializes in macroeconomic matters worldwide. Its mission is to support and protect prosperity at home by encouraging financial stability and sound economic policies overseas. This office helps develop policies related to international economic, financial, monetary, trade, investment, debt, development, environment, bilateral aid, and energy programs. IA serves as the U.S. representative at the International Monetary Fund (IMF), World Bank, and other multilateral development banks. It also serves as the interagency chair of the Committee on Foreign Investment in the United States (CFIUS) process, reviewing potential sales of U.S. businesses to foreigners to identify and address any national security risks as the result of the transactions.

Finally, the Office of Terrorism and Financial Intelligence (TFI) uses a variety of statutory authorities and an expertise in illicit finance both to protect the U.S. financial system and advance U.S. foreign and security policy abroad. TFI works bilaterally and multilaterally to improve other countries' anti–money laundering and combating the financing of terrorism (AML–CFT) regimes and increase the effectiveness of international cooperation on terrorist financing and money laundering. Additionally, to combat specific threats, TFI can employ targeted financial measures, commonly called financial sanctions or designations, to freeze U.S.-controlled assets of terrorists, narcotraffickers, proliferators, and the vast networks of charities and companies that facilitate these activities. Through financial sanctions, TFI effectively and publicly prevents these nefarious actors from accessing the U.S. financial system.

What Does Treasury Do?

Located adjacent to the White House and National Security Council, Treasury takes its policy role within the national security process seriously. The Department focuses on its own niche capabilities of macroeconomics and AML–CFT measures. However, since money is fungible, Treasury's interests can extend far beyond pure fiscal and monetary issues. For instance, it cares if a country is sold F–16s or other high-cost items if that country's financial ability to maintain the equipment is suspect. Treasury will likely scrutinize a highly indebted country undergoing a comprehensive military modernization program. As a variant of the guns-versus-butter debate, foreign aid can also alter domestic military expenditures. Treasury is not tone deaf to political and military implications. It does, however, take seriously the second- and third-order implications of fiscal impropriety and poor economic policies.

since money is fungible, Treasury's interests can extend far beyond pure fiscal and monetary issues

Treasury's national security capabilities defy easy categorization. Within the three-legged stool of security, economics, and governance, Treasury's core competencies fall within at least the latter two. While created to avoid the "cylinders of excellence," the 3 Ds (defense, diplomacy, and development) also too often become shorthand for Defense, State, and the U.S. Agency for International Development (USAID), respectively. While Treasury does not articulate its own capabilities in those terms, the 3 Ds provide at least a familiar structure for DOD officials to conceptualize Treasury's national security capabilities and roles.

Financial and Economic Defense. What Treasury calls *targeted financial measures* allow the United States and international community to freeze or seize financial accounts of less savory individuals, organizations, and banks. Executed by TFI, "smart" financial sanctions are targeted against individual bad apples as opposed to entire countries. These are distinct from relatively less targeted sanctions the United States imposes: economic sanctions, enacted to restrict certain types of trade (led by Commerce), and diplomatic sanctions, enacted to restrict international travel and other privileges (led by State).

TFI is concerned with many of the same actors as DOD. It designates individuals involved in money laundering, terrorism and terrorist facilitation, proliferation, corruption, drug trafficking, and other destabilizing actions. For instance, TFI has frozen the assets of Iranian banks, North Korean tycoons, al Qaeda leaders, and Hizballah operatives worldwide.

Treasury's means obviously diverge greatly from DOD's, making this a tremendous U.S. defense capability. Rather than attempting to kill or capture individuals, TFI uses its in-house intelligence office to track money around the world. Bank accounts, wire transfers, and financial transactions all help show that a person, organization, or bank is sponsoring illicit actors or funding the acts themselves. Freezing bank accounts is not a silver bullet that will stop terrorism or drug trafficking. However, these sanctions make it much more costly, difficult, and time consuming for those identified to do what they want. Moreover, by identifying facilitators publicly, these designations can often have knock-on effects beyond the U.S. financial system and can prompt foreign governments to take similar actions. As we all know, slowing down the enemy's decision cycle provides a tremendous strategic advantage.

TFI has a complicated process to designate individuals. Briefly, Treasury's TFI mandate derives from a variety of executive orders and the USA PATRIOT Act. Based on policy priorities, TFI's Office of Intelligence and Analysis tracks people or organizations of national security interest and closely coordinates with the rest of the Intelligence Community. Once a designation packet is complete and approved within the national security process, TFI's Office of Financial Assets Control (OFAC) lists the entity. OFAC also passes this information on to domestic

and international governments, banks, and other financial institutions, so they know not to deal with this entity if they want to remain in good standing with the United States and its financial system.

Treasury also helps maintain the economic defense of the homeland, serving as the chair of CFIUS, whose cases can arise due to the nature of a U.S. business (that is, if the company possesses certain advanced technologies or has Government contracts) or the identity of the foreign person (that is, the track record of the person or the nonproliferation record of the individual's country of origin). Operating pursuant to the 1950 Defense Production Act, CFIUS has undergone significant reforms since the United Arab Emirates–based Dubai Ports World's attempt to purchase the port management businesses of major U.S.

Treasury's means obviously diverge greatly from DOD's, making this a tremendous U.S. defense capability

seaports in 2005–2006. DOD works closely with Treasury within this committee, providing substantive expertise and threat assessments to help the United States balance its free market and national security imperatives.[3]

Financial and Economic Diplomacy. Treasury's IA officials have long served as U.S. financial and economic "diplomats"—although most work in Washington, with only a handful stationed abroad. Treasury regularly interacts with its traditional counterparts within foreign finance ministries and central banks.[4] Especially in times of financial turmoil or to encourage others to enact or strengthen financial sanctions, Treasury's interactions with heads of state and government are routine. For instance, the largest economies' finance officials began meeting annually in the wake of the 1973 oil crisis and subsequent global recession, soon becoming the Group of Seven. Similarly, a larger group of finance ministers formed the Group of 20, first meeting in 1999 after the Asian financial crisis. Treasury also has attachés within 13 Embassies worldwide, providing targeted expertise and communications in places of national interest.

The Department is the lead agency with authority over the U.S. representatives serving on the boards of the IMF, World Bank, and most regional development banks. Maintaining permanent offices at each, Treasury's close work with both the staffs of the international financial institutions (IFIs) themselves and with the representatives from other countries promotes U.S. national interests and influence on current issues. Just as governments often send their top military leaders to U.S. military schools, their premier economists and future government leaders often serve rotations at the IFIs in Washington. Treasury's diplomacy through the IFIs thus directly promotes U.S. long-term interests.

Relations among these economic officials, at the IFIs and in finance ministries and central banks worldwide, are usually excellent and frank. Many attended the same prestigious economic and business schools in the United States and Europe. In addition, and often as a result, many of these technocrats prioritize the same monetary, fiscal, and financial principles. Having similar economic backgrounds does not eliminate disagreements any more than having shared military experiences. However, these relationships and similar perspectives help improve communication and coordination. As a result, coalitions within the IFIs and among ministries are able to make progress that otherwise would not likely occur. With the largest global capitalist economy and increasingly constrained military resources, U.S. economic and financial relationships are great sources of soft power we should continue to leverage.

Financial and Economic Development. While Treasury's main financial stick—sanctions—is spiritedly touted, its macroeconomic carrots are unsung national security heroes. Effective and efficient governments excel at macroeconomic tasks, such as collecting more revenues than they spend (at least in the long term), paying their employees and soldiers on time, maintaining a stable currency and development-friendly policies, and executing transparent budgets to minimize corruption. Unfortunately, few states that DOD is concerned with (except major powers) do most of these tasks well.

Traditionally, development focuses on microeconomic improvement (for example, employment, projects, and community-based activities), which USAID specializes in. However, when it comes to macroeconomic expertise, Treasury—particularly the Office of International Affairs—is without peer within the U.S. Government. IA monitors and analyzes global economic and financial events and trends. It maintains extensive bilateral interactions with the countries' finance ministries and central banks, while also drawing on expertise from private and public sector scholars and analysts. IA then works alongside public and private actors to develop and promote good economic and financial governance that improves countries' prosperity and stability. Its representatives also brief and help prepare senior Treasury and other U.S. officials on policy and substantive issues, decisions, and international engagements, with many issues focusing directly on economic and financial development. While much of this work is based in Washington, Treasury also leverages expertise and information from its strategically placed attachés to improve development efforts.

Treasury has one small development arm within IA, the Office of Technical Assistance (OTA). Using in-house experts and a meager budget—just $34 million was requested for 2010[5]—OTA officials partner directly with interested foreign governments to help them improve their economic and financial systems. Using embedded advisors and short-term trainers, OTA can assist a great range of governments, including postconflict, fragile, and failed ones. OTA focuses on five core areas: budget policy and management, financial institutions policy and regulation, government debt issuance and management, financial enforcement, and tax policy and administration.[6]

OTA is currently providing technical expertise throughout the world, some of it in support of the highest U.S. strategic priorities. Treasury is providing technical assistance to countries affected by and susceptible to the financial crisis, helping to determine the extent of their financial vulnerability, address immediate crisis-related challenges, and prepare for recovery. OTA advisors in Iraq, working with the civilian and military Public Finance Management Action Group, focus on public finance issues and help improve budget execution. OTA helped build capacity in Afghanistan's debt management office and is helping create processes needed for a future domestic government securities market. In Pakistan, OTA assisted the government in improving its banking supervision and is helping the country create a Financial Intelligence Unit within its central bank.[7]

As the formal U.S. representative to the IFIs, Treasury also has a critical international role in economic development. Whether dealing with the macroeconomically focused

IMF or the microeconomically focused World Bank and regional development banks, Treasury's work alongside these international financial institutions helps to bring expertise, resources, and international legitimacy to developmental challenges worldwide. Combining these capabilities, Treasury helps empower governments to more effectively and efficiently enact their own economic and financial policies, including within IA and TFI areas of expertise.

Why Should DOD Care?

Too often, the Departments of Defense and Treasury operate in parallel universes. This is not without reason, as the two have different core competencies with limited direct overlap. For instance, it is wise that the military is not intimately involved in designing the TARP or new regulations for the global financial system. Treasury's skills are much better used not dealing with Fallujah or leading Partnership for Peace exercises.

However, DOD can and should better understand this Department for at least three reasons. First, unlike other interagency partners with which Defense often engages, Treasury's action-oriented, problemsolving instincts are readily recognizable to military personnel. Filled with professionals forgoing large salaries for government work—again, much like DOD—Treasury officials insist that solutions create measurable, monitorable, and sustainable results. These officials can choose to remain as technical specialists throughout their careers, rather than having an "up-or-out" promotion policy. As a result, the quality and experience of economists at all levels of Treasury are superb. Even when Defense's challenges are not directly related to Treasury's, having similar-minded peers with competencies outside our own can be useful within interagency discussions and debates.

Second, everyone loves money. People want jobs. Governments want more revenues to spend. Foreign militaries want to modernize, and we need military interoperability with our allies. Even nefarious actors—terrorists, drug traffickers, proliferators of weapons of mass destruction (WMD)—appreciate the ease of using Western financial institutions. Treasury, in coordination with the IFIs, helps the United States and international community reach their desired economic and financial ends. By structuring incentives appropriately, money can be a critical warfighting and peace-sustaining enabler.

Finally, DOD should better understand Treasury since the Department's small size constrains what it can proactively engage in. While mighty, the Treasury can only split people and their focuses so many ways. For instance, Treasury's entire Office of International Affairs—its "army" of regional and functional macroeconomic experts—employs fewer than 200 people, including political appointees and administrative staff. Twelve Treasury advisors in Iraq are relatively minuscule in number, yet they constitute 6 percent of IA's entire global workforce. By better understanding what capabilities Treasury can bring to various fights, DOD can help pull information and expertise, especially for problems with which Treasury might otherwise not have the resources to engage.

In sum, for the foreseeable future, DOD will face tremendous challenges dealing with the security implications of failed states, rogue actors, WMD proliferators, demographic shifts, and globalization. Many of these challenges will have critical economic aspects that Treasury colleagues already specialize in. By DOD better leveraging the Department's unique capabilities in economic and financial defense, diplomacy, and development, the United States can more effectively and efficiently ensure the security and prosperity of the Nation for many decades to come. **JFQ**

NOTES

[1] Additional information on the Department of the Treasury is available at <www.treas.gov/>.

[2] See <www.treas.gov/bureaus/>.

[3] See <www.treas.gov/offices/international-affairs/cfius/>.

[4] The New York Federal Reserve ("Fed") serves as the U.S. central bank. While independent of Treasury, the Fed and Treasury work closely together and both interact with foreign ministries of finance and central banks.

[5] See <www.treas.gov/offices/international-affairs/intl/fy2010/budget-FY2010.pdf>.

[6] For a discussion of Treasury's processes to help states build and strengthen their public financial management institutions, see Jeremiah S. Pam, *The Treasury Approach to State-Building and Institution-Strengthening Assistance: Experience in Iraq and Broader Implications*, U.S. Institute of Peace (USIP) Special Report 216 (Washington, DC: USIP, October 2008).

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Military History and the Study of Operational Art

By MILAN VEGO

Wage war offensively, like Alexander [the Great], *Hannibal, Caesar, Gustav Adolphus, Turenne, Prince Eugene and Frederick* [the Great]*; read and re-read the history of their campaigns; model yourself on them; it is the only way to become a Great Captain and to master the secrets of the art.*

—Napoleon I

One of the key prerequisites for applying operational art is full knowledge and understanding of its theory, and theory cannot be properly developed without mastery of military history. The great military commanders were, almost without exception, avid readers of history. Because the opportunities to acquire direct experience in combat are few for any commander, the only sources of such knowledge and understanding are indirect, and military history is the most important source of such experience.

The Problem

The education of operational commanders should start early in their careers. The U.S. Service academies and colleges can and should provide a solid foundation of military history. However, far more important is self-education of the future operational commanders through the study of both general and military history throughout their professional careers. In general, inattention to the history of warfare is perhaps the greatest weakness in the education of U.S. officers. History is largely treated as a marginal embellishment instead of a core of military education.[1] One of the major problems in teaching operational art is generally poor to almost nonexistent knowledge of wars conducted in the modern era, not to say of those conducted in the ancient and medieval eras. This cannot help but have highly negative consequences on the ability of future flag officers and their staffs to exercise their duties in times of war and peace.

Too many officers have an aversion to military history, a problem made worse over the past 20 years by several factors. Not only the leading proponents of information technologies but also their many uncritical followers firmly believe that military history cannot provide any valuable lesson for today or the

Wallace Collection, London

***Napoleon and His Staff* (1868), by Jean-Louis-Ernest Meissonier**

National Archives (Print by A.H. Ritchie)

Staatsbibliothek, Berlin

Above: George Washington entering New York, 1783

Right: *Major-General Carl von Clausewitz*, by Karl Wilhelm Wach

future. Despite all the experiences of previous generations, military history is considered essentially irrelevant in the information era. Historical examples are sometimes willfully distorted and even intentionally falsified to prove preconceived notions on the importance of advanced technologies in the conduct of war.

What Is Military History?

All too often, history is considered the exclusive preserve of professional historians. Yet it is inherently broader, deeper, and more diverse than the study of any other area of human activity.[2] It encompasses every aspect of the experience of humanity,[3] and it tends to broaden the vision and deepen the insights of its readers. Events are seen as part of a much broader framework filled out with complex and dynamic interrelationships of social forces, individuals, location, and timing.[4] B.H. Liddell Hart, for instance, wrote that history is:

the record of man's steps and slips; it shows us that the steps were slow and slight; the slips, quick and abounding. It provides us with the opportunity to profit by the stumbles and tumbles of our forerunners. An awareness of limitations should make us chary of condemning those who made mistakes, but we condemn ourselves if we fail to recognize mistakes.

History serves as a foundation of education because it shows how mankind repeats its errors and what those errors are. French historian Marc Léopold Benjamin Bloch (1886–1944) observed that history is, in its essence, the science of change. History teaches that it is impossible ever to find two events that are exactly alike because the conditions from which events spring are never identical.[5]

The true purpose of history is to describe the truth. However, a pure truth is never unalloyed. History can only provide objective truth as closely as possible.[6] It can only show us the right direction but cannot provide details in regard to how we should reach a final destination. It can also show us *what* to avoid, but it cannot tell us *how* to avoid. At the same time, history can highlight the most common mistakes that mankind is apt to make and to repeat. It teaches its students how to learn by the experience of others.[7]

History is a highly vigorous and intellectual discipline. Through the process of explanation and its use in the time dimension, history examines the development of human institutions and attitudes. Political, economic, and social ideas do not emerge from a vacuum. They are given meaning only by the circumstances within which they occur. They also do not spring from sources of eternal truth; they are conceived in the minds of humans who contribute to and are affected by specific events.[8] History gives its readers a consciousness of particular circumstances in human affairs. It teaches them to be wary of broad generalizations and quick solutions.[9]

Military history is a part of general history. No matter one's attitude toward war, it is an integral part of the human history. There has never been a century without a war, and never has there been a peace that lasted 100 years.[10] But after the end of World War II, the world entered an era of almost continuous low-intensity conflicts, while there were only a few high-intensity conventional wars. The 3,500 years of military history is the only academic study that provides the totality of the phenomena of war.[11] A study of past wars is fundamental to preparation for the next war, for current military problems cannot be solved without an understanding of the past from which they stem.[12]

Military history must be more than a logical, factual, and frank record or account of events. Above all it must be accurate. Carl von Clausewitz aptly observed that military history has value when it "always presents the truth, the entire truth, and nothing but the truth."[13] However, people in general are unwilling to admit the truth if it disturbs their comfortable assurances. The most dangerous of all delusions are those that arise from the adulteration of history in the imagined interests of national and military morale.[14] Historical accounts that glorify victories and gloss over or omit failures are worthless to students who are seeking to improve their ability as leaders in war. Hence, to be of any value, history must give all the facts, pleasant and unpleasant, about the campaigns at hand.[15]

history serves as a foundation of education because it shows how mankind repeats its errors and what those errors are

Sharpshooter's fate at Gettysburg, July 1863

War Department (Alexander Gardner)

Dr. Milan Vego is Professor of Operations in the Joint Military Operations Department at the Naval War College.

The greatest danger for the proper application of historical knowledge is propagandistic and censored history. Such histories are more commonly written in totalitarian or authoritarian societies. However, such distorted views of events are unfortunately often written in democracies. Propaganda as history will rouse defeated nations to new activity. Victors, on the other hand, like to exaggerate the extent and importance of their successes. The main purpose of a propagandistic history is to make everything appear in the most favorable light. Such a history might be politically necessary, but it is also dangerous.[16] In fact, such a history is not history at all. Among other things, it cannot provide sound lessons or serve as the basis of intellectual and professional education. It fosters one of the worst evils in professional military thinking—self-deception.[17] Perhaps one of the worst examples of propagandistic military history was the Soviet history of the Great Patriotic War (1941–1945) written during Stalin's era and even well into the late 1980s. All of the writers paid the greatest tribute to the Soviet dictator Josef Stalin, a leader who never made a mistake. The Red Army performed superbly and without fail. But even after the end of Stalin's era, the Soviet history of World War II remained heavily propagandistic in tone and content. Hence, even if some events were truthfully presented, it was difficult to distinguish fact from fiction.

War of the Nations (New York Times Co., 1919)

German submarine captured by Allied forces, World War I

The Importance of Military History

The basis of military education is to provide mental development for future commanders. Its practical value is the training and mental development of soldiers. The benefits of studying military history depend on how closely it approaches the definition and method of studying it.[18] Among other things, its study provides a commander with a core of background knowledge and understanding that allows him to form and reform his vision of the battlefield beyond the realm of his combat experiences.[19] Planning games and wargames, field trips, and exercises are excellent tools for improving the quality of operational and tactical training. However, only the study of military history can provide insights into all aspects of warfare.[20]

military history provides a commander with background understanding that allows him to form and reform his vision of the battlefield beyond the realm of his combat experiences

Prussian General Johann David von Scharnhorst (1755–1813) firmly believed in the value of military history for creating a new type of highly educated officer.[21] Napoleon I (1769–1821) observed that on the battlefield, what one believed to be a happy inspiration proved to be merely a recollection.[22] Field Marshal Helmuth von Moltke, Sr. (1800–1891) was an avid reader of history.[23] He reportedly used his knowledge of past military events in preparing plans for his campaigns.[24] However, British field marshal Sir Archibald Wavell (1883–1950) held a different view. He believed that study of psychology and leadership are of greater importance to a military man than the study of operations. Wavell asserted that the military successes of Napoleon I could be attributed to his knowledge of psychology rather than to his study of rules and strategy. Yet Napoleon himself said that the knowledge of the higher art of war is not acquired except by experience and the study of history of wars and the battles of great captains.[25]

A full understanding of the relationship between policymakers and operational commanders can be obtained by studying military and political history. The future operational commander must fully understand the political strategic objective and strategy and policy before he can start to understand various aspects of operational art. That understanding and knowledge can essentially be acquired only through the critical study of past wars and major operations and campaigns.[26]

This critical study of past wars—campaigns and major operations, in particular—is a primary source for developing the operational perspective of future commanders. Warfare does not have its own logic, but it has its own grammar, and the grammatical rules are deduced from studying military history. Because few commanders have experience commanding forces at the operational level, the best way to educate them to think operationally is through the study of the successes and failures of great military leaders.

The study of military history provides a broad perspective on events and gives a sense of proportion in relation to time, place, and circumstances.[27] Methods of accomplishing operational or strategic objectives in the past might be obsolete today, but the fundamentals of strategy or operational art remain essentially the same as they were in the recent or even distant past. A study of history allows us to deduce tenets of operational warfare. The concentration of forces, for instance, affected the outcome of the battle at Leuctra (in Boetia) in 371 BCE, where the Thebans defeated the Spartans, in the same way it did in the German invasion of France in May 1940.[28]

A proper study of military history helps to derive general principles of leadership through a critical reading of the biographies and memoirs of the great captains of the past. It also helps in understanding the reasons for their successes and failures.[29] By studying military history, we can get a sense of the pressure and responsibility of commanders in uncertain situations when critical decisions must be made.[30]

History can be studied to derive lessons that prove or negate the validity of tactical and operational tenets and ways of using one's military sources of power. So understood, it not only contains the study of the past but also can be useful in the future and can provide concrete instruction for action.[31] Moltke, Sr., believed that the concrete historical conditions of a military success or failure must be taken into account in deriving lessons. Lessons learned from a study of military history should not be dismissed because of the inherent limits of one's own experiences. In his view, for practical application, lessons should be deduced from timeless tactical and strategic fundamentals.[32]

Studying Military History

The study of military history should be one of the most important parts of the cur-

riculum in all Service academies and colleges. However, future operational commanders and planners will never fully master this critical subject unless they devote considerable effort to self-education throughout their professional careers. They should be students of history, not historians—a big difference exists between the two. The better educated the commander, the more he understands the bigger picture and the better he will perform his responsibilities (provided that the commander has the essential qualities of character).[33] This implies that study of military history should be methodical and long term. The most recent wars should be studied first because they are most relevant for the current situation and will be for some time.

A serious study of military history must be accompanied by study of the general history of the period and setting under consideration.[34] In studying military history, one should analyze all the events in their entirety; otherwise, events that in fact portend trends for the future might be omitted from analysis. The real danger in studying military history is that a narrow mind will gather the formal aspects of past successes divorced from their proper context. The most obvious reasons for victory are often the most unreliable and worthless guides for future action. As one naval historian aptly observed, "Those who have blindly followed the easy path of thoughtless imitation have often ended in dire disappointment."[35]

Military history should be studied in width, depth, and context. By studying warfare in *width*—that is, over a large timeframe—one can discern and learn the discontinuities.[36] Ideally, the study should focus on the history of the art of war, which will show how and why it has changed from era to era. A study of military history should not be limited to a certain age or area. One of the pitfalls is trying to cover too broad a field. It would seem much better to cover a limited number of events thoroughly than to give students a superficial picture of the greatest possible number of occurrences.[37] Hence, military history should be studied in

the danger in studying military history is that a narrow mind will gather the formal aspects of past successes divorced from their proper context

depth. One should read everything available on the subject. This means that not only official histories should be studied but also memoirs, autobiographies, letters, diaries, and even historical fiction. Only in such a way can one hope to learn what really happened.[38] It is more valuable to know a single campaign in great detail than several campaigns superficially.[39]

Operational lessons learned are derived from in-depth study of a large number of major operations or campaigns—or case studies. The best tactical lecture, the best lecture on military theory, or the best doctrinal publication would remain dry, bloodless, and inanimate if it were not illustrated with specific examples from the past. However, military history is not just a collection of examples. It also provides the highest quality of nourishing material for the soul of soldiers.[40] Generally, it is a mistake to see the past in distinct patterns, for it is true that each student reads his own peculiar lesson according to his own peculiar mind and mood.[41] Clausewitz said that if some historical event is being presented in order to demonstrate a general truth, care must be taken that every aspect bearing on the truth at issue is full and circumstantially developed and carefully assembled before the reader's eyes; otherwise, the proof will be weakened, and it will be necessary to use a number of examples to provide the evidence missing in the first event. [42] The larger the number of examples, the more reliable the results and the more likely that sound lessons will be derived. Very often, this method is abused by citing many examples without providing many details. Such an approach can provide a superficially strong proof, but one without much substance. There are some aspects of war for which one may present a dozen examples to support a certain theory and the same number of examples to prove just the opposite. Clausewitz wrote that a single event, thoroughly analyzed, might be much more instructive than one that is superficially treated. He observed that the danger in a superficial treatment lies in the fact that, in most cases, he who writes in such a manner has never mastered the events he cites—therefore, such superficial, irresponsible handling of history leads to hundreds of wrong ideas and bogus theorizing.[43]

The emulation of historical examples has often been used to save time and resources or to win bureaucratic battles in support of a

U.S. Army

U.S. Soldiers march into Germany through the Siegfried Line, 1945

U.S. Navy (Obie Newcomb, Jr.)

Marines storm Tarawa in Gilbert Islands, November 1943

specific solution. More often than not, these so-called lessons entrapped those who tried to apply them without recognizing the changes in conditions that occurred with the passage of time.[44] The greatest disservice to history and its lessons comes from its frequent association with a given set of military principles or doctrine, as Antoine-Henri de Jomini (1779–1869) did in studying 30 campaigns of Frederick the Great (1712–1786) and Napoleon I. He deduced (erroneously) certain fixed maxims and principles that he claimed were both timeless and universal in application.[45]

A latent danger in studying military history is to derive lessons that might have been correct for a given historical era but that have become inappropriate or entirely false for the problems of the day. It is even more serious to continue to rely on such lessons without trying to adjust, refine, or even abandon them in light of the new situation. For example, the writings of Rear Admiral Alfred T. Mahan (1840–1914) are a classic example of lessons that not only were uncritically accepted but also were dogmatically followed long after their utility passed. Mahan was essentially not a theoretician but a historian of seapower. He did not use historical examples to illustrate a theoretical construct; rather, he used naval history to derive lessons that could be universally applied. Mahan's ideas on the superiority of capital ships, decisiveness of major naval battles, and irregular and indecisive nature of commerce destruction were accepted almost without question as the foundations upon which to build navies. At the same time, his strong support for convoying as the most effective method for protection of shipping was virtually ignored.[46]

Another pitfall in studying military history and deriving lessons is in focusing on a single defining moment and then absolutizing its significance at the expense of all others. In studying military history, one should avoid applying a historical example of one era to completely changed contemporary conditions, as Chief of the General Staff Field Marshal Alfred von Schlieffen (1833–1913) did. Despite his great intellect and erudition, he committed fatal errors in interpreting the lessons of military history. Among other things, he became fixated on a single solution to a complex strategic problem: the defeat of France at one fell swoop. Schlieffen considered the example of the envelopment maneuver at Cannae in 216 BCE as the main tenet for transforming one's own strategic inferiority into relative operational superiority at a decisive point.[47] His biggest mistake was to raise experiences from a single decisive battle to a strategic concept. In effect, Schlieffen tried to transfer the experiences of preindustrial wars—the Punic Wars (264–146 BCE), Seven Years' War (1756–1763), and Napoleonic Wars (1805–1815)—to the completely new circumstances of major wars in the industrial era. At the same time, he neglected to draw lessons from the American Civil War (1861–1865) and the Russo-Japanese War (1904–1905).[48]

In studying military history, diverse sources should be used, ranging from official and semiofficial histories, autobiographies, biographies, and social history to reminiscences of simple soldiers. Biographies of great captains are generally more objectively written than autobiographies. The books and articles written by war correspondents and journalists can have a great value for any student of history. Also, historical novels can be quite useful.[49] General George Patton (1885–1945) said that to be a "successful soldier you must know history, read it objectively. Dates and even minute details of tactics are useless. . . . you must also read biography and especially autobiography. If you will do it you will find war is simple." The most useful histories of past wars are those written from an operational perspective. Unfortunately, such histories are sorely neglected, and relatively few have been written. Histories written during the life of the actors or too near their era are generally tinged with prejudice, colored by self-interested flattery, and influenced by the selection and treatment of source material. Histories written too long after the time of participants are often fictional and sentimental.[50]

one should avoid applying a historical example of one era to completely changed contemporary conditions

Yet for all its proven value, the study of military history should be approached skeptically. Those studying it should be aware that they are studying not necessarily what really happened, but rather what historians say happened. In studying history, there is one's judgment, but there are no formulas, tenets, or rules. Military history cannot and should not provide a precise determination of norms for the future. The contradiction between theory

National Archives

Generals Omar Bradley, Dwight Eisenhower, and George Patton at Bastogne, 1944

and practice can be bridged only when theory is understood as contemplation and not as a lesson.[51] Clausewitz believed that the purpose of studying war was to hone judgment before the battle, not to dictate decisions during it. He was adamant that the study of military theory, and by extension military history, should guide the commander in his self-education, not accompany him to the battlefield.[52] Clausewitz warned against misusing history by expecting to provide a school solution rather than to educate the mind of the military commander to expect the unexpected.[53]

Experience abundantly shows the critical role and importance of comprehensive understanding and knowledge of military history for all officers, and especially for those who aspire to or are selected to take the highest duties in their respective Services. Almost without exception, successful operational commanders have been serious students of history. Because the life of any officer is too short, the opportunities for acquiring operational perspective by commanding large forces in combat are rare indeed. Yet the broad view and solid knowledge and understanding of the art of war must be obtained in peacetime. It is too late to obtain that knowledge once the hostilities start. Moreover, operational perspective is a prerequisite for successful command at the operational level not only in war but also in time of peace. The most important and proven source of that indirect experience is military history. A future operational commander should approach the study of military history systematically and as a lifelong effort; otherwise, the results will be wanting. **JFQ**

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[46] Alfred R. Bowling, *The Negative Influence of Mahan on the Protection of Shipping in Wartime: The Convoy Controversy in the Twentieth Century* (Ph.D. diss., University of Maine, 1980), 2.

[47] Karl-Heinz Frieser, *Blitzkrieg-Legende. Der Westfeldzug 1940* (Munich: R. Oldenbourg Verlag, 1995), 416; Lothar Burchardt, "Operatives Denken und Planen von Schlieffen bis zum Beginn des Ersten Weltkrieges," in *Operatives Denken und Handeln in deutschen Streitkraeften im 19. und 20. Jahrhundert*, ed. Horst Boog et al. (Herford, Germany: Verlag E.S. Mittler & Sohn, 1988), 52–53.

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[51] "Kriegslehren. Grundsaetzliches zur Methodik am Beispiel Golfkrieg II," *Oesterreichische Militaerische Zeitschrift* 1 (January-February 1993), 30–31.

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Confronting the Chaos: A Rogue Military Historian Returns to Afghanistan
By Sean M. Maloney
Annapolis: Naval Institute Press, 2009
384 pp. $34.95
ISBN: 978–159114–508–0

Reviewed by
JAMES THOMAS SNYDER

Sean M. Maloney is an established military historian teaching at the Royal Military College in Kingston, Ontario. The second of a planned three-book series about the war in Afghanistan, *Confronting the Chaos* focuses on two important but neglected aspects of the military effort in that country: the multinational contribution and the Provincial Reconstruction Teams (PRTs). He bases the book on a series of visits in 2004–2006 to the German PRTs at Kunduz and Feyzabad, the North Atlantic Treaty Organization's (NATO's) nascent headquarters in Kabul, and Canada's efforts in the capital and its PRT in Kandahar.

Maloney's emphasis is important because NATO has adopted PRTs in Afghanistan as a linchpin of security and reconstruction at the local level. Today, their number stands at 26, and they have assumed new tasks, including counterinsurgency, governance, counternarcotics, and police training. So a full-bore treatment is welcome and overdue.

This book, however, is not that treatment. Maloney makes no attempt to draw larger conclusions about PRT practice or the multinational commitment. However, he is frank about his lack of ambition: "Each trip, each meeting, is a piece of the puzzle necessary to understand the counterinsurgency effort, and the intent is for the reader to put those pieces together to discern the picture that emerges." That is exactly wrong. It is the historian's job to piece the puzzle together and paint the picture through observation, inquiry, and research. Instead, he abandons the reader to his myopic, itinerant impressions. Maloney's experiences are pinpointed to specific places in time, now 5 years out of date, and the book is compromised by serious and systematic errors.

When not an acronym-barbed thicket, Maloney's prose alternates between the glib and the profane. While he is clearly interested in his subjects, his curiosity does not extend to any political, historical, or operational perspective. For example, he refers to the counterinsurgency effort without defining the term or linking it to the doctrinal innovations undertaken by the U.S. military in Iraq. He refers to the Taliban and other opposing forces as "the enemy" without exploring their strategies, political goals, or tactics in any detail. These are considerable oversights given his commitment to studying the war.

Perhaps worse is Maloney's failure to answer common-sense questions that would logically follow his observations. In many cases, he has had ample time to research incidents that occurred while he was in-country but for which "details were sketchy" at the time. On one occasion, for example, he discursively explores all the nations that could have flown two helicopters (a CH–47 or a CH–53) potentially identified in a friendly fire incident involving Canadian soldiers, only to reveal later that the helicopter was a U.S. Special Forces MH–6 and that the Canadians had stumbled into their training area. After huffing about the aggressive Americans, Maloney does not ask the obvious questions: How did the Canadians wander into the firing range? Why did the Canadians not have Identification Friend or Foe equipment? How did the Canadians mistake the tiny MH–6 for a helicopter as large as a CH–47? Those questions articulate much more compelling, relevant concerns in a complex, multinational tactical environment than pinning some nation with blame for a blue-on-blue incident that resulted in no casualties.

Maloney is a lint brush for detail. Much of his reporting that is not irrelevant or disjointed seems accurate based on this reviewer's experience in the country during the same timeframe and may be useful to those searching for insight into "the platoon leader's war." For example, Maloney examines how violence, politics, and development in Kandahar are entangled in local water access, disputed land claims, and tribal rivalries. The notion that Afghanistan requires a political rather than a military solution becomes overwhelmed by the country's sheer granularity. The axiom that all politics is local holds true in Afghanistan as in perhaps no other place.

The moments this book springs to life come when Maloney allows people in the field to speak for themselves, moments that are both compelling and useful. Canadian Strategic Advisory Team members talk about how Afghan officials they mentor transformed the Western bureaucratese of an economic planning paper into their own document, filled with Islamic allegories, historical references, and poetic allusions. The Kandahar PRT members lament how Afghan police in one district beg for more equipment and weapons but shake down villagers in another. A Canadian soldier vividly describes an improvised explosive device detonation that injured his gunner, killed a child, and sprayed his vehicle with the bomber's remains. Unfortunately, Maloney follows up the soldier's soliloquy by asking him about "some of the more memorable things he'd seen in Kandahar during his time there."

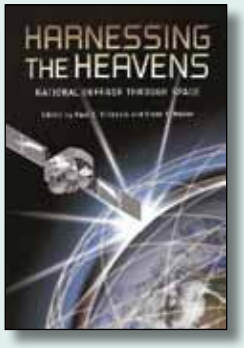
Maloney relies heavily on his own reportage, which becomes a serious liability given the book's staggering number of errors. Maloney lists only five and a half pages of footnotes—one chapter has no notes at all—and ignores existing literature. Taken together, the book's overall reliability must be questioned. In the case of Operation *Redwing* in 2005, for example, during which 16 U.S. special operators were killed in action, Maloney misspells the mission name and fails to identify the target of the raid. These details and others could be discovered in the 2007 memoir of the mission's lone survivor, Marcus Luttrell. Maloney seems to conflate psychological operations with information operations and never defines the disciplines. He accuses the news media of ignoring tribal rivalries in Kandahar, although a cursory search of *The New York Times* quickly discounts this assertion.

Senseless typographical, stylistic, and editing problems also proliferate. In one case, Maloney footnotes a geographic mistake that he made in his previous book only to commit the same error nine more times. In another, he hints that he will again meet some special operators he clashes with en route to theater, but they never reappear.

The larger argument with Maloney's effort is his myopic approach. The book fails as an autobiography because he

spends little time in the country, and because his experience and reporting are so mundane. He collects outdated spot reporting largely unconnected from the broader campaign, PRT practice, and the evolution of the multinational effort in Afghanistan. He relies to an almost stupefying degree on official mission statements to learn about the activities of the various PRTs—an approach that does not tell the reader much more than a Web search would. If he had committed to more research, followed up interviews, and talked to more people, a more cohesive and coherent volume could make a vital contribution to the limited literature on Afghanistan. The war, now approaching its first decade, demands much from those committed to fighting it. A similar commitment is required to understand it as well. **JFQ**

James Thomas Snyder is the U.S. Information Officer on the International Staff at North Atlantic Treaty Organization Headquarters in Brussels.



Harnessing the Heavens: National Defense Through Space
Edited by Paul G. Gillespie and Grant T. Weller
Chicago: Imprint Publications, 2008
235 pp. $29.95
ISBN: 978–1–879176–45–4

Reviewed by
JEFFREY L. CATON

This book comes at an interesting time in the history of U.S. space activity. Its publication is within 1 year of the 40th anniversary of the Apollo 11 moon mission. Ironically, it is also within 2 years of the National Aeronautics and Space Administration's (NASA's) planned date for the termination of space shuttle flights, with no replacement until at least 2015, when the Orion system should be available. This conscious abdication of human spaceflight capability forces the United States to depend on Russian (or Chinese?) rockets to ferry astronauts to and from the International Space Station, a structure built with over $25 billion of U.S. investment.

What are the national defense implications of such actions? To evaluate such situations properly requires both historical knowledge and forward thinking. This book provides both. Organized as 14 essays divided into 4 sections, *Harnessing the Heavens* offers contributions from Everett Dolman, Roger Launius, Howard McCurdy, and others in the pantheon of space authors with hundreds of years of collective experience analyzing space issues. They share their wealth of experience not only through superb prose, but also with extensive endnotes.

The book's first section, "Space and the Cold War: Prime Motivations for Space," consists of five outstanding essays that provide historical context regarding the early development of U.S. spacepower. The essays analyze issues at the strategic level and consider the influences of all elements of national power. Common themes among the authors include the emergence of the trinity of civil, military, and intelligence communities for space application; the evolution of diverse priorities given to space programs by the Dwight D. Eisenhower, John F. Kennedy, and Lyndon Johnson Presidential administrations; and the influence of competition with the Soviet Union in space efforts.

The lead article sets the stage with a summary of space development from the German V–2 rocket to the present day, stopping just short of including the 2006 space policy. It explains the important distinction between *weaponizing* space and *militarizing* space, and it presents the six major perspectives on the debate regarding the presence of weapons in space. The next four compositions delve into some of the specific national competitions that characterize the space portion of the Cold War. These articles provide fascinating details on such topics as the separate studies for possible moon bases made by the Army and Air Force, the emphasis placed on unmanned reconnaissance satellites over manned spaceflight by Eisenhower, and Kennedy's initial reluctance as a space supporter that changed only with the political realities following Soviet Yuri Gagarin's triumph as the first man in space.

The next section, "Doctrinal Faith: Strategic Dimensions of the War Fighter and Space," builds upon the trifurcated structure of space introduced in the first section with particular focus on U.S. Air Force contributions. The first composition is a concise survey of the manned space program pursued by the Service from 1959 to 1963, highlighting the interactions with NASA's Mercury and Gemini programs as well as the Dyna-Soar spaceplane. The next article steps through several recurring themes in Air Force space history, such as the pursuit of peaceful purposes, need for assured access, challenge of building space-savvy leadership, role of commercial sectors, and debate on establishing a separate Space Corps. This section's final article addresses the compelling topic of space weapons as a driver to transform warfare. However, due to some unfounded and extraneous material presented for dialogue, it is not as credible as the book's other works.

The third section, "U.S. Space from the 'Other Side of the Fence,'" provides an outstanding overview of strategic issues related to other nations' space programs. The lead article addresses the evolution of Soviet space power during the Cold War, delivering succinct summaries of the key players and institutions as well as their roles within the context of evolving global security. It concludes with a recap of five broad patterns of Soviet space activity. The next article is a perfect companion to the first, covering China's space program with its emphasis on a "two bombs [nuclear fission and fusion], one satellite" goal that was achieved between 1964 and 1970. The author, Dean Cheng, argues that China sees space as a "major component of future conflict," although its motives remain unclear at times, such as those surrounding the January 2007 antisatellite weapon test. The third article talks to the celebrity nature of women astronauts. Although a well-written commentary, it is not consistent with the theme of the section, and it fails to mention Valentina Tereshkova, the first woman to orbit the Earth. A better essay to complete this section might have been one assessing the implications of commercial space enterprises, especially those of the European Space Agency.

The final section, "Technological Change and the Transformation of American Space Power," offers excellent historic context with strategic analysis of the role of technology in space power. Its first essay focuses on the realm of hypersonic travel as

the key to routine space access pursued by the Air Force early in the space age. The author, Roy F. Houchin II, contrasts how various Presidential administrations viewed this potential capability and entertains the possibility of the next generation bomber being a hypersonic platform. The next selection is a masterful treatise on satellite communications from 1966 to 2007, balancing technical details with historic evolution of all major U.S. programs. Its holistic analysis includes consideration of strategic requirements, user needs, costs, and benefits. The section closes with an editorial reflecting on the need for "warriors in space." Although the essay offers thoughtful conjecture and opinion, it does not serve as a comprehensive summary of the book's themes.

Overall, *Harnessing the Heavens* is a "must read" for anyone contemplating research on national (or international) defense issues related to space—past, present, or future. Most of the contributors accomplish the difficult task of condensing extensive material into concise, focused, and compelling prose that is readable by nonprofessionals as well as experts. Reflecting on the various articles, it is clear that even 50 years after Sputnik, the pursuit of national defense through space remains largely an ad hoc effort. **JFQ**

Colonel Jeffrey L. Caton, USAF, is a faculty member and Defense Transformation Chair at the U.S. Army War College. He has over 27 years of experience in space operations, joint operations, and acquisition management.

China's Energy Strategy: The Impact on Beijing's Maritime Policies
Edited by Gabriel B. Collins, Andrew S. Erickson, Lyle J. Goldstein, and William S. Murray
Annapolis:
Naval Institute Press, 2008
485 pp. $47.95
ISBN: 978–1–59114–330–7

Reviewed by
RICHARD DESJARDINS

These are exciting times for China watchers. The People's Liberation Army is in the midst of the most wide-ranging reforms undergone since at least the mid-1980s. China's opening to the outside world has expanded to its military. This explains in part the increasing accuracy of our understanding of China's military machine as well as its intentions. While much remains in the dark, discussions are much better informed, and the questions are getting more precise.

The China Maritime Studies Institute at the Naval War College has been holding annual conferences on the People's Liberation Army Navy (PLAN) since 2006. Founded in October of that year, the institute is fast becoming a center of excellence for research on all aspects of the Chinese navy. Papers presented at each conference are subsequently published in book format, with *China's Energy Strategy* being the second work in this series.

The purpose of *China's Energy Strategy* is to determine what role China's growing energy needs play in shaping the development and role of its navy. Until recently, the PLAN's main focus was believed to be on developing scenarios for invading Taiwan should Taipei unilaterally declare its independence. However, recent developments involving the navy suggest that Beijing is looking beyond Taiwan.

The literature on power politics indicates that naval development often offers a hint of the aspirations of an emerging power. Traditionally, China's navy has been a coastal one. But the country's emergence as an economic powerhouse is leading Western observers to query China's intentions in the military field. As the media have reported, the economy has been growing at an average rate of 10 percent per year for more than a decade. Until the recent problems involving international finance, prospects looked good for continued healthy growth.

Such growth involving a country the size of China puts enormous strains on its existing energy supply. Even if the country benefits from being home to a large reserve of coal, it was bound to begin looking abroad for additional energy supplies. A turning point came in 1993, when China became a net importer of oil. Domestic exploration had failed to discover sizable oil fields that could have postponed China's search beyond its border. Since then, Beijing has launched a broad and intensive campaign to secure access to oil and gas to feed its growing domestic needs. This campaign included negotiating long-term contracts in Southeast Asia, Central Asia, Russia, Africa, Latin America, and the Middle East, notably Saudi Arabia and Iran. China's shopping for oil inevitably raises other major challenges, including the impact on U.S. relations with countries such as Saudi Arabia.

The contributors to this book, however, focus on how China's offensive to secure access to oil and gas in faraway places will impact the development of its navy. They identify a number of issues that will likely shape this development: Chinese perceptions of U.S. intentions toward it, China's approach to secure the sea lines of communication (SLOC), and internal developments that may impact China's ability to fund the growth of its navy.

While all the contributions are excellent, several were of particular value to this reviewer, including chapters that covered the debate among Chinese analysts on U.S. intentions in the event of a conflict with China and how best to secure SLOC (Gabriel B. Collins, Andrew S. Erickson, and Lyle J. Goldstein); the importance of energy in China's military development and its ability to secure SLOC (James C. Mulvenon); a comparison of U.S. and Chinese vulnerabilities to disruption in energy supply (Charles W. Freeman, Jr.); the development of a strategic petroleum reserve (David Pietz); the geopolitics of natural liquefied gas markets (Mikkal Herberg); and the challenge of securing SLOC and China's attempts to date in developing facilities in Burma and Pakistan (James R. Holmes and Toshi Yoshihara). Throughout the book, contributors consider various purchases of weaponry over the years and the state (as of December 2006) of the Chinese navy and the extent to which it is prepared to meet any challenges involving SLOC.

The beauty of this book comes in different forms. As the editors indicate in their introduction, the contributors do not always agree. Thus, readers will note that Bernard Cole, for instance, does not see energy as having as important a role

in shaping naval developments in China as some of the other contributors. Charles Freeman warns that if China is extremely vulnerable to an oil embargo, so is the United States.

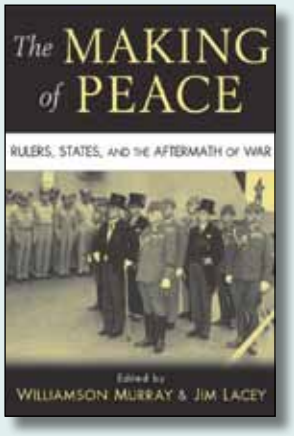
Important statistics are also provided. For instance, it is valuable to know that domestic energy sources account for 90 percent of China's demands. Oil consumption is heavily concentrated in transportation. Collins and Erickson review developments in the creation of a national tanker fleet and what role, if any, the Chinese state plays in it.

Many contributors touch on the so-called Malacca dilemma, named for the strait that joins the Indian Ocean and South China Sea. This point of vulnerability in China's access to oil has forced Beijing to consider many alternative options: digging a channel across the Thai peninsula, building a pipeline across Burma to Yunnan Province, or constructing pipelines in the north from Russia and various Central Asian republics.

Saad Rahim discusses China's diplomacy with Saudi Arabia. Fully cognizant of Saudi Arabia's close relationship with the United States, Rahim shows how China has moved cautiously to involve Saudi Arabia in its energy development, hoping that a Saudi stake in China's energy industry would turn it into an ally in the event of war. There is also a discussion of blockade strategies from a historical perspective and how China could be affected (Bruce Elleman).

Whether the issue is the Malacca Strait scenario, China's dependence on Middle Eastern oil, Beijing's charm offensive in Saudi Arabia, potential situations involving a confrontation with the United States over predominance in the western Pacific, or the impact of Chinese incursions into Central Asia on Sino-Russian relations, this collection of essays provides the latest scholarship. Further enhancing the book's value is that the contributors are all actively involved in shaping this multifaceted debate in their respective institutions. The emergence of Chinese naval power is bound to remain a top security issue for the United States in the foreseeable future. This reviewer could not exaggerate the importance of this book in understanding the issues shaping the development of the Chinese navy. **JFQ**

Richard Desjardins is a Canadian civil servant. He studied and worked in Taiwan from 1985 to 1988 and holds a Master's degree in Chinese politics.



The Making of Peace: Rulers, States, and the Aftermath of War
Edited by Williamson Murray and Jim Lacey
New York: Cambridge University Press, 2009
368 pp. $90
ISBN: 978–0–5215–1719–5

Reviewed by
JOHN T. KUEHN

Shortly after the United States launched Operation *Enduring Freedom* to change the Taliban regime in Kabul in response to 9/11, Sir Michael Howard wrote a rather dark and pessimistic editorial on the outlook for the intervention in Afghanistan. History appears to have finally caught up with his assessment and the implications of how difficult making peace really is. With *The Making of Peace*, Williamson Murray and Jim Lacey have made an extremely welcome contribution to the plethora of good scholarship being published that attempts to better understand the continuum between war and peace.

Murray and Lacey turned to Sir Michael and his ubiquitous scholarship to put this collection of essays (including several by the editors) into context with a preface. In 2006, Murray and Howard had teamed in much the same way to look at the importance of history to military professionals in *The Past as Prologue*. A year later, Howard did a similar favor for the editors of *Clausewitz in the Twenty-first Century*. The point has almost been reached where if an anthology has a preface or foreword by Howard, the book is definitely worth purchasing.

As with all good books, the title implies the major thesis: that the making of peace is a process dependent on ruling elites, the nature of the state, and the political and cultural context of the immediate postwar period. One theme common to all the essays is how difficult and undervalued the process of forging a lasting and stable peace is. Another is that much of what Carl von Clausewitz had to say about the dynamics that influence war can be applied to the processes of establishing and maintaining peace. Howard's preface makes clear that all such attempts to forge something that lasts face considerable philosophical challenges. Citing Western philosophers Saint Augustine, Thomas Hobbes, and Immanuel Kant, Howard implies that the task is perhaps impossible. But he also gives us the sense—as do these essays—that to undervalue (or, in today's usage, *underresource*) the effort intellectually and politically is to guarantee that bugaboo of modern times: the flawed peace that leads to even more destructive and sustained conflict. Therefore, like war, one must closely study peace and its maintenance in order to better ameliorate the effects of war, which the philosophers seem to have concluded is endemic to the human condition (and rightly so, in this reviewer's opinion).

Murray's introductory essay revisits Howard's themes and informs them with relevance for today. He is particularly critical of the West's ahistoricism and how it leads to the adoption of convenient myths about why wars start and end, myths that in turn contribute greatly to the problem of making peace (p. 23). Next come 12 essays in generally chronological order whose common theme is the difficulty of making a lasting peace. The authors are much the same group deployed to such good effect in *The Past as Prologue*. The phrase may seem clichéd, but they are all acknowledged experts in their chosen fields of study: from Paul Rahe on the ancients to Frederick Kagan and Colin Gray on recent times. Of particular interest, and comprising a recurring major theme, is the tenuous larger lesson that Richard Hart Sinnreich teases from his discussion of the justly famous Congress of Vienna in 1815. He attributes the breakdown of general peace to some common factors that transcend the specifics of the historical moment: "When in the fullness of time that self-discipline finally vanished under the pressures of militant nationalism, societal boredom, the disappearance of historical memory, and political and military arrogance, so also did the peace of Europe and the world" (p. 159). Replace *nationalism* with any number of current *-isms* (for example, jihadism) and

drop *Europe* from the sentence, and it describes accurately a view of the world today. In other words, loss of the historical memory of the brutality and catastrophe of general war is the biggest threat to the maintenance of a general peace.

Sinnreich's concluding essay synthesizes many of these themes and extrapolates from Howard's opening discussion. Like Howard, he finds three general "approaches" in the historical record examined for making the peace: "universal governance" through collective security (for example, the United Nations), "strategic equilibrium" through balance of power, and, lastly, "progressive democratization" based on the flawed notion that democratic governments are not bellicose (p. 360). All these approaches have one thing in common: none of them ultimately work. These essays give the impression that prospects for any of them gaining the upper hand as the approach of choice are pretty dim. As usual, and as expected, these historians give us no intellectual shortcuts to the hard job of making peace, and the work of diplomats and peacemakers will remain a seemingly Sisyphean task.

To the reader looking for something substantive on the period between the Peloponnesian War and the Peace of Westphalia following the Thirty Years War, this book will be a disappointment. This gap, and the Western focus, is perhaps the book's most obvious shortcoming. It fails to address just what went into the making of the *Pax Romana* and the long, brutish, but relatively peaceful *Pax Pontifex* of the Catholic Church. Also missing are essays on the sustained periods of peace during the various Chinese dynasties (from which we might learn much) and the complete absence of war for nearly 250 years in the Tokugawa Shogunate of Japan. But these are mere quibbles, given the high quality of the essays. In his introductory essay, Murray argues (somewhat casually) that the Chinese and Roman experiences are anomalies and that the Western focus of the book is intentional because we must first understand ourselves. However, at some point we must understand others, so one would thus hope for a second volume that taps scholars for these other civilizations and periods.

Military and diplomatic historians, and perhaps students at senior war colleges, will need no prodding to examine this important work, but it would be a shame if they were the only audience. This book *needs* as broad a readership as possible; otherwise, the ahistoricism that currently informs Western and even global polities (particularly the United States) will continue to contribute to the undervaluation of the challenges in making peace and the overvaluation of the efficacy of war as a means to policy ends. **JFQ**

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Joint Doctrine Update

Joint Chiefs of Staff J7 Joint Education and Doctrine Division

The Joint Doctrine Development Community (JDDC) will host the 45th Joint Doctrine Planning Conference (JDPC) May 12–13, 2010, in the Washington, DC, metropolitan area. This conference not only synchronizes the JDDC, but also launches some of the groundbreaking discussions leading the way in matters that affect today's doctrine. (For the latest news on JDPC, follow the JDEIS link below.) During the last JDPC, two major topics discussed were the revision of Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*, and development of a new joint publication, JP 3–15.1, *Joint Counter-IED Operations*.

JP 1 provides fundamental principles and overarching guidance for the employment of the Armed Forces of the United States, links joint doctrine to the National Defense Strategy and National Military Strategy, and describes the military's role in the development of national policy and strategy. JP 1 is the link between policy and doctrine. In short, it describes the Department of Defense as an institution and how it aligns within the broader context of the U.S. Government to achieve the Nation's objectives. One key to fully exploiting our remarkable joint military potential, not currently written in JP 1, is how we *develop* the joint force.

While the United States has been developing the joint force, the many and diverse parts of this process are not yet holistically and cohesively articulated, the result being a myriad of individual policies and communities in isolation. JP 1 should provide the strategic framework that aligns the Chairman's long-term vision with the development of the joint forces. While currently in revision, JP 1 will correct this omission by answering two fundamental questions regarding joint force development: what it is and what process is used to develop the force. These questions will serve to frame the discussion and development of this topic.

Answering the first question, what it is, entails three steps. Using the reverse planning rubric, the first step is to determine the endstate or goal of joint force development, next discern its components, and finally craft an initial working definition to structure development of the process. Broadly speaking, the end result of joint force development is to provide government agencies and personnel the guidance to build and maintain a joint force capable of conducting current and future joint operations across the range of military operations. To do this, warfighters must be educated and trained to "think, plan, and act" jointly first. Although not all-inclusive, critical components of joint force development will include concept development, doctrine, education, training, and exercises. Using the endstate as our foundation and arranging its resident components, a proposed definition of joint force development emerges:

A deliberate, iterative, and continuous process of planning and developing the current and future joint force through advancement of transformational joint concepts which are refined into relevant

doctrine, promulgated through career long education and training, validated through a robust exercise program, resulting in decisive, adaptable war plans.

The intent of this new JP 1 chapter is to foundationally establish the roles, responsibilities, processes, and procedures for developing the joint force to provide all Services, combatant commands, and combat support agencies the authoritative guidance to build and maintain a joint force. This guidance will also serve to inform the U.S. Government, nongovernmental organizations, and allied nations.

The revision process for JP 1 began in January 2010 and is planned for completion by year's end. This accelerated revision timeline is imperative as JP 3–0, *Joint Operations*, and JP 5–0, *Joint Operation Planning*, are both currently under revision. The primacy of JP 1, as the Capstone publication, should influence, inform, and ground discussions throughout the array of the joint hierarchy, especially JP 3–0 and JP 5–0. Once accomplished, proper revision order will be achieved, allowing a cohesive narrative among these three key joint publications.

The other major outcome of the JDPC was the approval of JP 3–15.1. Battlefield employment of improvised explosive devices (IEDs) has become a more prevalent tactic in recent years, and this trend is expected to continue as our adversaries seek to counter our efforts abroad. Additionally, it was identified that current joint doctrine provides little detail for the conduct of counter-IED operations, the planning for and execution of these kinds of operations, or the roles and responsibilities of the staffs. Lacking this overarching guidance, the Army and Marine Corps have developed their own doctrine. This joint publication will set the conditions for a joint approach to this ever-growing threat by providing joint doctrine for planning and executing joint counter-IED operations. JP 3–15.1 will outline responsibilities, provide command and control considerations, discuss organizational options, detail the counter-IED process, and attack the network methodology, as well as introduce models for coordinating with counter-IED supporting organizations. The first draft is currently in staffing and the expected signature date is August 2011.

For access to joint publications, go to Joint Doctrine, Education, and Training Electronic Information System (JDEIS) Web portal at https://jdeis.js.mil (dot.mil users only). For those without access to dot.mil accounts, go to Joint Electronic Library Web portal at www.dtic.mil/doctrine.

JPs Revised or Under Review

JPs Approved in Calendar Year (CY) 2009

JP 1–05, *Religious Affairs in Joint Operations*
JP 2–01.3, *Joint Intelligence Preparation of the Operational Environment*
JP 3–02, *Amphibious Operations*
JP 3–06, *Joint Urban Operations*
JP 3–09.3, *Close Air Support*
JP 3–13.2, *Psychological Operations*
JP 3–14, *Space Operations*
JP 3–17, *Air Mobility Operations*
JP 3–24, *Counterinsurgency*
JP 3–26, *Counterterrorism*
JP 3–29, *Foreign Humanitarian Assistance*
JP 3–40, *Combating Weapons of Mass Destruction*

JPs Scheduled for Approval in CY 2010

JP 1–04, *Legal Support to Military Operations*
JP 2–01, *Joint and National Intelligence Support to Military Operations*
JP 3–0, *Joint Operations*
JP 3–02.1, *Amphibious Embarkation and Debarkation Operations*
JP 3–07, *Stability Operations*
JP 3–07.2, *Antiterrorism*
JP 3–08, *Interagency, Intergovernmental Organization, and Nongovernmental Organization Coordination during Joint Operations*
JP 3–09, *Joint Fire Support*
JP 3–22, *Foreign Internal Defense*
JP 3–31, *Command and Control for Joint Land Operations*
JP 3–34, *Joint Engineer Operations*
JP 3–52, *Joint Doctrine for Airspace Control in the Combat Zone*
JP 3–61, *Public Affairs*
JP 3–68, *Noncombatant Evacuation Operations*
JP 4–03, *Joint Bulk Petroleum and Water Doctrine*
JP 4–09, *Joint Doctrine for Global Distribution*
JP 6–0, *Doctrine for C⁴ Systems Support in Joint Operations*

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Lewis M. Stern reviews the recent history of U.S.-Cambodia defense relations, showing how Cambodia's lax border controls, widespread corruption, and active arms trade have made that country a staging ground for numerous activities that challenge the safety and well-being of the region. He argues that U.S. interests would be well served by a stepped-up program of cooperation with Cambodia in areas such as counterterrorism, peacekeeping, counternarcotics, disaster response, and stability operations. U.S. early investment in Cambodia's future—beginning with support for the regional peace process—would provide a useful foundation for cooperation and have a beneficial impact on Southeast Asia as a whole.

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Developing a Common Understanding of Unconventional Warfare

By MARK GRDOVIC

In June 2009, the commanders of U.S. Special Operations Command (USSOCOM) and U.S. Army Special Operations Command (USASOC) adopted the following definition of unconventional warfare (UW):

Unconventional Warfare consists of activities conducted to enable a resistance movement or insurgency to coerce, disrupt or overthrow an occupying power or government by operating through or with an underground, auxiliary and guerrilla force in a denied area.

The USSOCOM commander further directed that all forces assigned within his command adopt this single definition, concurrent with the official change to the doctrine that will follow pending the publishing of the new Joint Publication (JP) 3–05, *Doctrine for Joint Special Operations*, in the near future.

This revised definition was the culmination of an effort initiated by USSOCOM in 2008 based on an identified lack of common understanding across the Department of Defense (DOD) as well as the special operations community. The working group that developed the final definition met for 3 days in April 2009 at the U.S. Army John F. Kennedy Special Warfare Center (USAJFKSWC) at Fort Bragg. Subject matter experts included representatives from USSOCOM, USASOC, U.S. Army Special Forces Command, USAJFKSWC, Joint Special Operations University, Naval Postgraduate School, and U.S. Army Training and Doctrine Command.

The catalyst for this effort came as a result of the USSOCOM Global Synchronization Conference in October 2008, where the lack of a precise and common understanding of UW became particularly evident. The coexistence of multiple definitions, compounded by varying interpretations, significantly hampered effective discussion or planning. The state of ambiguity not only undermined the credibility and value of the topic among military professionals, but also divided the special operations community into two main schools of thought.

One school argued that UW is an umbrella concept encompassing a wide variety of activities conducted by irregular forces. This concept includes support to resistance movements and insurgencies, as well as other operations conducted by irregular forces. This essentially delineates UW from other operations by the methodology of employing irregular forces. In this context, all missions conducted by irregular forces are considered UW. These missions could be conducted against a state or nonstate actor or an organization. Other special operations (direct action, special reconnaissance, counterterrorism) would be denoted as exclusively unilateral or coalition actions and would not involve irregular forces.

The other school of thought advocated UW specifically as a type of special operation, which is the enablement of resistance movements and insurgencies. Within this construct, UW can involve numerous activities, but these activities are not exclusive to the UW mission. While the associated tactics, techniques, and procedures for working with guerrilla forces and undergrounds greatly enable special operations forces to perform other special operations, the use of irregular forces alone does not make these operations UW. They are categorized by what they aim to achieve rather than their methodology or the type of force conducting them.

Evolution

Since the introduction of the term *UW* into the DOD lexicon in 1955, the definition has seen numerous changes. When the incremental changes of the last few decades are viewed collectively, it becomes apparent that the continued expansion and contraction of the topic have been counterproductive to the common understanding of UW.

By 1990, the UW definition was little more than a string of unspecific nonbinding phrases, followed by a list of possible associated tactics or activities. This definition left the reader with a vague description about UW and little in the way of anything defining the essence of the topic:

A broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted by indigenous or surrogate forces who are organized, trained, equipped, supported and directed in varying degrees by an external source. It includes guerrilla warfare, and other direct offensive, low visibility, covert, or clandestine operations, as well as the indirect activities of subversion, sabotage, intelligence activities, and evasion and escape.[1]

In June 2001, the Army definition was modified leading to a 2003 change in the joint definition. The genesis for this change, initiated in 1999, was largely due to a prevailing perception that the likelihood of conducting UW was low, if not nonexistent. Therefore, an effort had to be made to remove all wording that could be perceived as limiting. To this end, "normally of long duration" was removed and the phrase "through, with, or by" was added. The phrase "low visibility, covert or clandestine" was also removed along with the distinction of "indirect activities." "Evasion and escape" was changed to the more UW-specific "unconventional assisted recovery," and the caveat of "includes but is not limited to" was added to the list of activities:

UW is a broad spectrum of military and paramilitary operations, predominantly conducted through, with, or by indigenous or surrogate forces organized, trained, equipped, supported, and directed in varying degrees by an external source. UW includes, but is not limited to, guerrilla warfare, subversion, sabotage, intelligence activities, and unconventional assisted recovery.[2]

Interestingly, as the definition changed over time, much of the amplifying material in the doctrinal text remained the same. However, history has shown that definitions must stand on their own merit of clarity without requiring the reader to do further research. Much of the previous UW doctrine included a definition of unconventional

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warfare immediately followed by a paragraph clarifying the definition. The first line following the UW definition in the 1998 and 2003 JP 3–05, as well as the Army 1990 Field Manual (FM) 31–20 and 2001 FM 3–05.20, *Special Forces Operations*, stated, "UW is the military and paramilitary aspect of an insurgency or other armed resistance movement."

Similarly, the first line in the 2003 Army FM 3.05.201, *Special Forces Unconventional Warfare Operations* (also derived from amplifying material in the 1992, 1998, and 2003 JP 3–05), seemed necessary to provide clarity to the previously stated definition: "The intent of U.S. UW operations is to exploit a hostile power's political, military, economic, and psychological vulnerability by developing and sustaining resistance forces to accomplish U.S. strategic objectives."

The vagueness within the actual definition led some to interpret the last line—"UW includes, but is not limited to"—in a manner similar to a menu of activities that could be considered UW. However, this offered little value to decisionmakers, as the majority of these activities (or tactics and techniques) are not considered exclusive to the conduct of UW by others in DOD.

The same community of interest listed above conducted a similar effort in 2005 to clarify the definition. Although initiated based on a recognition of a lack of clarity following the two successful UW campaigns in Operation *Enduring Freedom* in 2001 and Operation *Iraqi Freedom* in 2003, the ongoing debates regarding the war on terror and counterinsurgency at the time inadvertently changed the effort from one of clarifying the topic of UW to an effort to make it more applicable to the current campaign. As a result, the topic of UW was presented as more of a methodology than a type of operation. The description declared the methodology of working through, with, or by irregulars as the construct that defined UW.

While this situation theoretically broadened the applicability of UW to all scenarios and adversaries, the unintended consequence was the subsequent removal of previously requisite knowledge and skills associated with the topic of supporting resistance movements and insurgencies. Doctrine, unlike concepts, is based on proven best practices and principles. This new concept was first presented in the form of Army doctrine in 2007. The resulting confusion was evident by the inclusion of "Support to Insurgency" as a topic separate from UW in the early drafts of the 2008 Irregular Warfare Joint Operations Concept and the 2008 Army FM 3–0, *Operations*.

The highly successful UW campaigns of Afghanistan in 2001 and Iraq in 2003 were quickly labeled as outdated versions of traditional or classical UW. This derogatory categorization gave rise to new phrases such as *Advanced UW*, *Black UW*, and *Modern UW*, all of which are as inaccurate as they are unhelpful. Subsequently, the operational shortcomings of those campaigns remain largely unstudied and unresolved 8 years later.

by 1990, the UW definition was little more than a string of unspecific nonbinding phrases, followed by a list of possible associated tactics or activities

While various concepts labeled as new applications of UW were presented as alternative methodologies for countering irregular warfare threats, it was largely unnoticed that most if not all of these new concepts already existed in the form of other doctrine. Examples of concepts from the last few years that have sometimes been misrepresented as new UW concepts include the support to tribal irregulars, such as the Sons of Iraq or Afghan tribal elements. Army foreign internal defense doctrine accounted for this tactic since 1965, and it remains in the current doctrine:

Remote area operations are operations undertaken in insurgent-controlled or contested areas to establish islands of popular support for the HN [host nation] *government and deny support to the insurgents. They differ from consolidation operations in that they are not designed to establish permanent HN government control over the area. Remote areas may be populated by ethnic, religious, or other isolated minority groups. They may be in the interior of the HN or near border areas where major infiltration routes exist. Remote area operations normally involve the use of specially trained paramilitary or irregular forces. SF* [Special Forces] *teams support remote area operations to interdict insurgent activity, destroy insurgent base areas in the remote area, and demonstrate that the HN government has not conceded control to the insurgents. They also collect and report information concerning insurgent intentions in more populated areas. In this case, SF teams advise and assist irregular HN forces operating in a manner similar to the insurgents themselves, but with access to superior* [combat support] *and* [combat service support] *resources.*[3]

Similarly, the notion of using irregulars to conduct attacks against terrorists or insurgents as a form of UW seems to be a reinvention of long-standing direct action and counterterrorism doctrine. It is a common misconception that direct action refers to U.S. unilateral action. However, the term *direct action*, first introduced in special operations doctrine in 1969, was meant to imply quantifiable offensive action taken directly against an

Air Force pararescue specialists are trained and equipped to conduct conventional and unconventional operations

U.S. Air Force (Liliana Moreno)

enemy—not action conducted *directly* by U.S. forces unilaterally. Counterterrorism doctrine, although limited, includes attacks against terrorist infrastructure, whether conducted by U.S. unilateral forces or with the assistance of other forces, be they regular or irregular. The methodology used or type of force conducting the operation does not change the type of operation.

The current USSOCOM- and USASOC-approved UW definition is significant for several reasons. First and foremost, it provides instant clarity to decisionmakers. With clarity come credibility, confidence, and trust, all of which are essential in the relationship between the special operations community and senior decisionmakers. Secondly, this definition brings a degree of accountability previously absent from this topic. Specifically, it ensures that individuals and organizations possess the associated professional knowledge and operational capabilities to claim proficiency in UW.

In 1983, Secretary of the Army John O. Marsh stated, "Doctrine is the cornerstone upon which a special operations capability can be erected. . . . Our failure . . . to develop doctrine has prevented special operations in the Army from gaining permanence and acceptability within the ranks of the military." Ideally, this level of clarity will foster the development of the capabilities specifically required for UW in the 21st century. Perhaps more importantly it will lead to the integration of the topic into mainstream professional military education and training, thereby enabling the special operations community to better complement the conventional force capabilities as well as offer the geographic combatant commands a full spectrum of options for the challenges of today and tomorrow. **JFQ**

NOTES

[1] Joint Publication (JP) 3–05, *Doctrine for Joint Special Operations* (Washington, DC: The Joint Staff, October 28, 1992).

[2] JP 3–05, *Doctrine for Joint Special Operations* (Washington, DC: The Joint Staff, December 17, 2003).

[3] Field Manual 3–05.202, *Foreign Internal Defense* (Washington, DC: Headquarters Department of the Army, 2007).

Operational Commander's Intent

By MILAN VEGO

The commander's intent is the key element in providing a framework for freedom to act and thereby enhance and foster initiative by subordinate commanders during the execution of their assigned missions. Yet despite its great importance, the commander's intent is still not understood well in the U.S. military. All too often, its purpose, content, and execution are either misunderstood or misused. There is also little recognition that its importance varies for each Service and at each level of command. Another problem is that the commander's intent is increasingly (and wrongly) used for purely administrative and other noncombat activities in peacetime. Perhaps the main reason for this is the lack of knowledge and understanding of the historical roots and theoretical underpinnings of the entire concept and its purpose.

In general, the importance of the intent depends on the character of the military objective to be accomplished, levels of command, and the nature of the medium in which pending operations will be conducted. The advantages of applying the commander's intent are generally higher in a decentralized command and control (C^2) because it is there that a large degree of freedom of action is required so subordinate commanders can act independently and take the initiative in accomplishing their assigned missions. In general, the more nonmilitary aspects of the objective predominate, the greater the need for centralized C^2, and therefore the smaller the importance of the commander's intent. In other words, the intent is much more critical in a high-intensity conventional war than in operations short of war. The higher the level of command, the greater the factors of space, time, and force, and thereby the greater the importance of the commander's intent. It plays a relatively greater role in land warfare than in war at sea or in the air. This does not mean that the intent is unimportant in naval and air warfare.

Term Defined

The *intent* can be defined as the description of a desired military endstate (or "landscape") that a commander wants to see after the given mission is accomplished. In terms of space, the intent pertains to the scope of the commander's estimate (in U.S. terms, the commander's area of responsibility plus an undefined area of interest). Depending on the scale of the objective, tactical, operational, and strategic desired endstates can be differentiated. For example, in a major operation, the commander's intent should refer to the situation beyond a given area of operations plus the area of interest, while in a campaign, it should encompass a given theater of operations plus the area of interest.

The Purpose

The main purpose of the intent is to provide a framework for freedom to act for subordinate commanders. In general, the broader the operational commander's intent, the greater the latitude subordinate commanders have in accomplishing assigned missions. The intent should allow the subordinate commanders to exercise the highest degree of initiative in case the original order no longer applies or unexpected opportunities arise.[1] In issuing the intent, the higher commander informs subordinate commanders what needs to be done to achieve success even if the initially issued orders become obsolete due to unexpected changes in the situation.[2] The intent should provide an insight into why the higher commander is embarking on a particular course of action.[3] The higher commander's intent should define

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mission success in a way that provides commonality of purpose and unity of effort.[4] The intent should be used as a broader framework for the development of friendly courses of action (COAs), while the more narrowly focused restated mission should serve as a guide in formulating each COA. The main utility of the commander's intent is to "focus subordinates on what has to be accomplished in order to achieve success, even when the plan . . . no longer applies, and to discipline their efforts toward the end."[5]

Roots

In the aftermath of the disastrous defeats by Napoleon I in the dual battles of Jena and Auerstadt in 1806, the obsolete Prussian military establishment was drastically reorganized. Among other things, General Gerhard Johann David von Scharnhorst (1755–1813) decentralized the command structure of the Prussian army by introducing army corps and permanent brigades. Moreover, he fostered independent thinking on the part of subordinate commanders.[6] These changes were formally codified in 1812 when the Prussian army's *Drill Regulations for the Infantry* was adopted. It was then that the term *intent* (*Absicht*) appeared for the first time in the German military vocabulary. The Prussian commanders were given short and broadly stated orders directing them where to assemble their forces. Afterward, they were free to exercise the initiative in accomplishing their assigned missions.[7] However, for the lower levels of command in the army, column tactics with their massive bodies of troops continued to impose severe limits on the conduct of the battle.[8]

After the end of the Napoleonic Wars in 1815, the Prussian army gradually reverted to its former overly rigid and formalistic methods of command and control.[9] It was not until 1857 when General (later Field Marshal) Helmuth von Moltke, Sr. (1800–1891, hereafter Moltke—not to be confused with his nephew Helmuth von Moltke, Jr., chief of the German General Staff, 1905–1914), became the chief of the Prussian General Staff that the emphasis was again given to independent actions by the subordinate commanders. The intent became an integral part of what the Germans call "the assessment of the situation" (*Lagebeurteilung*) and planning process. Moltke observed that "it is an illusion if the commander thinks that his continuous personal intervention by a commander into the responsibilities would result in some advantage. By doing so, a commander assumes a task which really belongs to others, whose effectiveness he thus destroys. He also multiplies his own tasks to a point where he can no longer fill the whole of them."[10] Moltke emphasized the need for critical thinking and independent actions by subordinate commanders. He wrote that "diverse are the situations under which an officer has to act on the basis of his own view of the situation. It would be wrong if he had to wait on orders at times when no orders can be given. Most productive are his actions when he acts within the framework of his senior commander's intent."[11]

Moltke further believed that in unforeseen situations, the commander's intent should predominate even if this requires subordinates to act differently than envisioned in the original plan. Commanders of army corps and divisions must assess the situation for themselves and must know how to act independently in consonance with the general intent. Each subordinate command should be informed of as much of the intentions of the higher headquarters as necessary for the accomplishment of the object because unforeseen events can change the course of things. Moltke differentiated between the intent given to each subordinate tactical commander and general intent (*Gesamtabsicht*) applied to the force as a whole.[12]

In the aftermath of the Wars for German Unification (1864–1871), many militaries in Europe, the United States, Japan, and elsewhere organized their general staffs on the German model. They also tried to copy with more or less success the German-style mission command (*Auftragstaktik*). In 1895, Captain Eben Swift, USA, was the first to discuss the importance of commander's intent in the U.S. military. He is also credited with introducing the five-paragraph order format (still in use in the U.S. military).[13] The commander's intent did not become part of the doctrine until 1982 when the Army's new Field Manual 100–5, *Operations*, was adopted.[14] In practice, however, this term was often poorly understood. In the 1990s, intent statements did not often comply with doctrine's content and structural guidance. They also often stipulated the method and thereby limited the flexibility of subordinate commanders if they failed to accomplish the task listed or achieve their commander's intent.[15] Since then, the commander's intent was included in the Army's and Marine Corps' doctrinal documents. It is also part of U.S. joint doctrine.

Prerequisites

The main prerequisites for the proper formulation of the operational commander's intent and its successful execution are solid knowledge and understanding of the true nature of war, mission command, and operational vision. The Clausewitzian view on the true nature of war was the foundation on which the Germans developed their highly successful mission command. The Germans firmly believed that war is full of ambiguity, confusion, and chaos. In war, the absolute cannot be achieved. Moltke observed that in war:

everything was uncertain; nothing was without danger, and only with difficulty could one accomplish great results by another route. No calculation of space and time can ensure victory in this realm of chance, mistakes, and disappointments. Uncertainty and the danger of failure accompany every step toward the accomplishment of the objective.[16]

The mission command tenets were incorporated for the first time into the German army's infantry drill regulations in 1888.[17] The higher commanders were directed to give their subordinates general directions of what must be done, but leave to them the decision of how.[18] No other military was as successful as Germany's in combining precision drill and unquestioning obedience with the initiative and independence at all levels of command.[19] In German theory and practice, the mission command was not only a set of procedures for combat but also a habit of thought—a mental approach to warfare at large.[20] Moreover, it was a *warfighting philosophy.* The mission command provided a framework where competency, decisiveness, and initiative of both junior and senior leaders were combined, resulting in the sum total of much greater effectiveness than if their qualities were used alone.[21] The principal elements of the mission command are the mission, situation, commander's intent, freedom to act, and initiative. For the Germans, the mission and situation are the most important factors in making a decision. Moltke asserted that the correct way to arrive at a decision is, in every case, to find out which of all the enemy's

actions would be most disadvantageous to one's forces. Then simple action, consistently executed, would accomplish the objective. Moltke repeatedly emphasized the critical role the assessment of the situation had in making a sound decision. He insisted that any prearranged scheme would collapse, and only a proper assessment of the situation could point the commander to the correct way.[22]

In the German military, the intent provided a framework within which a subordinate commander could act in the spirit of the mission issued by the higher commander.[23] The knowledge of the higher commander's intent was the absolute prerequisite for independent actions by a subordinate commander. Only then would a subordinate commander be able to act in accordance of the overarching framework when the existing orders became obsolete due to unforeseen events or if new orders were not issued.[24]

The commander's intent was aimed to both circumscribe and encourage subordinate commanders' exercise of the initiative.[25] In the Wehrmacht, the commander's intent was not a simple reiteration of the operational idea (*concept of operations* in U.S. terms); rather, it provided the flexibility necessary to out-think and act faster than the enemy. The commander issued his intent two command echelons *down*, and each commander was required to understand the intent two echelons *above* his level of command.[26]

The most critical element of the German-style mission command was the freedom of action (*Freiheit des Handeln*) that the higher commander gave to his subordinate commanders.[27] In the execution of the assigned mission, each subordinate commander would have sufficient freedom to act within the boundaries of a given (commander's) intent. Subordinate commanders were required to evaluate all planned actions in accordance with the higher commander's intent.[28] For the Germans, intent was virtually sacrosanct.[29] The execution of the mission in accordance with the higher commander's intent required not only independent action but also what the Germans called "thinking obedience" (*Denkende Gehorsam*).[30]

Freedom of action also included the commander's ability to divert from the assigned missions in case of a drastic change in the situation when quick action was necessary and the higher commander was not in a position to make a decision.[31] The Germans firmly believed that subordinate commanders are better able than the higher commander to handle situations in which split-second decisions were often decisive. A subordinate commander would also feel more ownership for his own actions, which would stimulate greater determination in executing them.[32] Yet at the same time, subordinate commanders' freedom to make independent decisions was combined with the responsibility for the consequences of those decisions. The Germans insisted that the highest commander and lowliest soldier must always be conscious of the fact that "omission and inactivity were worse than resorting to the wrong expedient."[33] Inactivity was simply considered criminal.[34]

In practice, freedom of action for the operational commander is never absolute; it is invariably subject to certain political, diplomatic, military, economic, social, legal, and, today, even environmental limitations. These limitations dictate whether the operational commander has a larger or smaller area within which he can operate of his own independent will. In general, the more the limitations on the operational commander's freedom of action, the fewer the means and ways the political leadership will have for accomplishing its stated political strategic objectives.[35]

the higher commander's intent should define mission success in a way that provides commonality of purpose and unity of effort

As a rule, the larger the scale of the military objective to be accomplished, the broader the intent and the further into the future the commander must look. At the tactical level, the commander's intent should envisage the flow of events in the course of executing a tactical action such as battle, strike, or attack. In contrast, the operational commander's intent should contemplate the chain of unfolding events in the course of execution of a major operation or campaign. The operational commander must visualize how tactical actions relate to one another and how they fit into a large operational framework. The commander's intent at the tactical level should encompass the situation for several hours to several days ahead of the current events. In contrast, the intent issued by the operational commander can encompass the development of the situation over several weeks or even months. Field Marshal Erich von Manstein (1887–1973) observed that an army group commander should think 4 to 8 weeks ahead of current operations.[36]

Operational thinking is both the foundation and framework for the commander's ability to properly anticipate action-reaction-counterreaction in the pending operation leading to the desired military endstate—or what is traditionally called "operational vision."[37] The key elements of a sound operational vision are a broad outlook, imagination, anticipation, intuition, *coup d'oeil*, inner perspective, historical perspective, and determination (see figure 1).[38]

Broad outlook means that the operational commander should envisage a major operation or campaign in its entirety instead of focusing just on the major combat phase. The fruits of one's victory can easily be wasted or completely lost if strategic or operational success is not consolidated and then exploited. *Imagination* helps the commander make decisions and act in a situation full of uncertainty, where information is ambiguous or incomplete or both.[39] *Anticipation* is one's ability to predict or to have foreknowledge. *Intuition* is one's knowing or sensing without using a rational process. It is an immediate cognition of the situation in the future, a sense of something to happen, which is not apparent or deducible. Intuition consists of three core elements: calm, comprehensiveness, and inquisitiveness.[40]

Coup d'oeil (French for "glance") is closely related to intuition, but it is not the same thing. It is an intuition based on real knowledge and experience, brought together in a flash of insight to suit a specific situation. It results in an action based on nothing firmer than instinct or a sensing of the truth. The commander with *coup d'oeil* has the innate ability to evaluate a situation accurately and set the stage for a rapid decision.[41] *Inner perspective* is related to *coup d'oeil*. It entails the ability to see clearly through the fog of war. It is the sense that allows a commander to see the true nature of the situation despite its inherent ambiguity. The operational commander also must have *historical perspective*. This requires a high degree of general intellectual development.[42] In referring to the value of the study of history, Napoleon I aptly observed that "what one believed to be a happy inspiration proved to be merely a recollection."[43] Clausewitz defined *determina-*

tion as the interaction among three qualities: ambition, motivation, and commitment.[44] It takes determination to see through all the false information and fog of war. This determination enables the commander to take certain actions despite all the indicators that tell him to make a different decision.[45]

Process

The entire process of developing the commander's intent consists of four distinctive but seamlessly related phases: formulation, articulation, communication, and execution. Formulation of the intent is the sole personal responsibility of the commander. No one *but* the commander should write the intent. In formulating the intent, the commander must first visualize the desired operational endstate after the assigned mission is accomplished. In a high-intensity conventional conflict, the military aspects of the desired operational endstate predominate. In contrast, in operations short of war, such as counterinsurgency or counterterrorism, the commander must envision both purely military and also many nonmilitary aspects of the situation upon completion of the mission.

In formulating the intent, the operational commander must first have a clear understanding of the current operational situation with relation to the enemy and physical environment. He must have the ability to properly visualize the sequence of actions by friendly forces in terms of actions, the enemy reaction, and counterreaction until the desired operational endstate is achieved.[46]

In the U.S. military, the format and content of the commander's intent can vary greatly. Sometimes the intent is considered not much different than the mission's purpose or even as an integral part of the mission together with the purpose and tasks.[47] In other cases, the intent is too detailed and in all but name resembles a concept of operations. The commander's intent also often improperly includes not only tasks for subordinate commanders but also the method of their accomplishment. Sometimes, commanders repeat almost verbatim the purpose of the restated mission and then explain in great detail tasks and the sequence of their accomplishment by subordinate commanders. The commander's intent often includes acceptable risks in the course of the mission's execution. However, the risks of the pending operation should be stated in the commander's planning guidance. They should also be assessed in the course of the development of each friendly COA.[48]

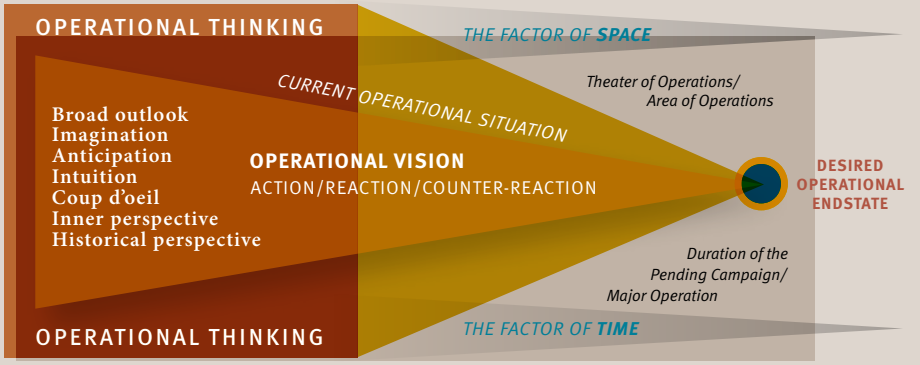
The U.S. Army's format for formulating commander's intent consisted in the past of three parts: purpose, method, and endstate. In the *purpose*, the commander explained the reason for the military action with respect to the mission of the next higher echelon. This was to help the force to pursue the mission without further orders, even when the action did not unfold as planned. However, the purpose of combat employment of one's forces should be part of the restated mission. In the part misleadingly labeled *method*, the commander described in doctrinally concise terms the form of maneuver or other action to be used by the force as a whole. Details as to specific subordinate missions were not discussed.[49]

> *the German army's higher commanders were to give their subordinates general directions of what must be done, but leave to them the decision of how*

Recently, the U.S. Army dropped *method* from the format for the commander's intent. It stipulates that if the purpose is addressed in the commander's intent, then it should be expressed more broadly as an "operational" context of the mission. The method in the intent's format was replaced with "key tasks"—those that the force as a whole must perform or conditions the force must meet to achieve the *endstate* and the stated purpose of the operation. Supposedly, the tasks are not tied to a specific COA; rather, they identify what the force must do to achieve the endstate. The U.S. Army prescribes that all acceptable COAs should accomplish all key tasks. Subordinate commanders would use key tasks to keep their efforts focused on accomplishing the higher commander's intent.

Examples of key tasks include terrain that must be controlled, operation tempo and duration, and operation effect on the enemy. It is explained that the key tasks are not specified tasks for any subordinate unit but may be sources for implied tasks.[50] However, there are several major problems with using so-called key tasks as part of the commander's intent. Normally, a properly written mission issued by the higher commander includes the purpose (or the objective) and several essential tasks. These tasks as considered by the subordinate commander are the specified tasks. Other specified tasks issued by the higher commander are found in subparagraph 3.c. of paragraph 3, "Execution." During the mission analysis step of the estimate of the situation, the subordinate commander would use each of the specified tasks to derive so-called implied tasks—those considered to be the prerequisites for accomplishing a given specified task. Hence, the key tasks in the intent cannot possibly be used as a source for deriving implied tasks. Also, the term *key task* is confusing because the word *key* can be easily understood as essential. Moreover, key tasks are either similar or identical to specified/implied tasks or can be completely different. In either case, they can only further complicate planning and execution of the operation. The U.S. Army also apparently confuses the "tasks" and "conditions" as if they are the same thing; *they are not*. To avoid any confusion and simplify the matter, no tasks should be included in the commander's intent. The proper place for listing tasks is in the restated mission and paragraph 3 of the operation

Figure 1. Operational Vision



plan/order. For example, in Iraq many U.S. commanders listed up to a dozen key tasks in formulating their intent. This, in turn, made it next to impossible for subordinate commanders to differentiate the most important key tasks from the others.

In generic terms, the operational commander should formulate two intents: *general intent* for the force as a whole, and the *intent* for each Service/functional component commander. In contrast, his subordinate tactical commanders should formulate only intent for their respective forces. The general intent should encompass two parts: the desired operational endstate and methods of accomplishing it. *Operational endstate* should describe broadly not only the military but also the nonmilitary aspects of the situation the commander wants to see for the enemy and friendly sides and neutrals. Envisioning nonmilitary aspects of the situation after a given mission is accomplished is especially critical in post-hostilities, counterinsurgency, and peace operations.

The operational commander should explain the methods of combat employment of his forces as a whole in achieving the desired operational endstate. This might include the use of surprise, deception, and broadly stated approach (for example, symmetric/asymmetric; direct/indirect) in defeating the enemy. He should also describe in broad terms the relationship between the friendly forces and enemy force with respect to capabilities and terrain. Obviously, the operational commander should not be limiting the freedom of action for subordinate tactical commanders by including methods. The intent for Service/functional component commanders should explain in concise terms the desired tactical endstate for their force after its assigned mission is accomplished.

Articulation

The operational commander's intent should be written in the first-person singular using compelling language. It should fully reflect the personality of the commander. The intent should be complete, telling subordinates what they must do and why. In addition, it should define success in executable terms.[51] The operational commander must bear in mind that he may not have the opportunity to meet his subordinate commanders face to face. Hence, subordinate tactical commanders should be able to read the higher commander's intent quickly and fully understand it. Optimally, the intent should be concise so the subordinate commander can remember it.[52] However, it can be longer in case the commander must address both the military and nonmiltary aspects of the desired operational endstate. The operational commander's intent must be so clear that subordinates can act in accordance of the intent even in a changed situation.[53] Hence, there is no place for language that might cause ambiguity and possible misinterpretation; otherwise, the intent would be useless. It is a sign of poor style to have the titles of the subsections in the final version of the written commander's intent. The operational commander should also use precise and commonly understood doctrinal terms.[54]

The operational commander's intent can be written in the form of sentence/paragraph or in bullet style. However, the former is preferable because it allows the commander to express his thoughts in free-form and in broad terms. Perhaps more important, sentence/paragraph style allows the commander to impart his own voice. Often, bullet style is used to explain each section of the intent in short sentences. It is inherently more rigid and does not allow the commander to express thoughts broadly. Supposedly, bullet style allows the commander to describe his thoughts more clearly. Yet it also results in incomplete thoughts and dilutes the impact of the commander's personality.

the intent issued by the operational commander can encompass the development of the situation over several weeks or even months

Communication

The operational commander should have his intent for the pending operation clear in his own mind before he conveys it to his subordinate tactical commanders. He should discuss his thoughts on the intent with his chief of staff, selected members of the staff, and subordinate commanders.[55] This would allow him to get feedback on whether the intent is too long or too short, poorly formatted, ambiguously worded, too detailed, and so forth.[56]

In general, the intent statement can be written or issued verbally. The higher the command echelon, the more likely that the commander's intent will be provided in writing or in message format. In analyzing a plan or operation order, the subordinate commander should not have to search for what the higher commander really wants him to do.

Higher and subordinate commander's intent must be properly aligned. Nesting of the commander's intents is aimed to allow sufficient freedom of action and exercise of initiative on the part of subordinate commanders while at the same time ensuring that the desired operational endstate of a force is attained. The higher commander's intent must be promulgated and clearly understood *two levels down* so that the intent and the resulting concepts of operations are nested to ensure unity of effort.[57]

The Germans considered the intent as much more important than the mission (*Auftrag*). The format of the German operation orders prior to 1945 centered on the intent of the commander. An operation order (*Operationbefehl*) was issued when the higher commander assumed that there would be changes in the situation before the order was executed. The Germans also often issued a preliminary (or warning) order (*Vorbefehl*), which also contained the commander's intent. They listed the intent immediately following the first paragraph pertaining to the information on the enemy and on friendly adjacent troops.

In the traditional U.S. military decisionmaking and planning process (MDMP), the commander evaluates the intent from the higher commander during the mission analysis step of the situation estimate. The operational commander has to analyze the mission and the intent received from the combatant commander (theater-strategic level). Afterward, he drafts the initial or tentative intent as part of the mission analysis step of the estimate of the situation.[58] The final version of the operational commander's intent is part of the decision statement.

In the traditional MDMP, the initial commander's intent is used to develop and refine courses of action that contribute to establishing conditions that define the endstate.[59] However, this contradicts the logic of the commander's estimate. It is the restated mission, not the intent, that most directly influences the development of friendly COAs. Restated mission is also reviewed at the beginning of each step of the commander's estimate of the situation. In contrast, the commander's initial intent should provide a broader and

more overarching framework for all the steps of the estimate. Its main purpose is to allow greater flexibility in developing both the enemy and friendly COAs.

In U.S. terms, the commander's final intent is expressed in the context of an oral order or written warning order, operation plan/order, and fragmentary orders.[60] Normally, all orders should be written by using the five-paragraph format. The problem is that complicated warning orders are all too often written by using a free-form format with a dozen or even more paragraphs. This, in turn, makes it unnecessarily more difficult to identify the key paragraphs, including the commander's intent. In an operation plan/order, the commander's intent is usually inserted as the first subparagraph of paragraph 3, "Execution," followed by subparagraphs for concept of operations, tasks, and coordinating instructions.[61] However, sometimes parts of the commander's intent are scattered among other parts of an operation plan or order. Such a practice should be avoided because the recipients of an operation plan/order should not be forced to divine the higher commander's intent.

The paramount importance of the commander's intent is not shown in the format of the U.S. operation plans/orders. Hence, the U.S. military should rethink its views on the relative significance of the mission and the commander's intent. The commander's intent is much more important than the mission because it determines a much broader framework within which each subordinate commander must operate and also exercise the initiative. The mission is clearly narrower in scope than the intent. Hence, the five-paragraph plan/order format should be changed by elevating the commander's intent above the mission. In contrast to a tactical commander, the operational commander should issue general intent for the joint force as a whole and then provide intent to each Service/functional component commander (see figure 2).

Execution

The main prerequisite for the successful execution of the intent is that subordinate commanders have sufficient freedom to act. Traditionally, the Germans accepted the Clausewitzian dictum that uncertainty is an element of war and can best be mastered through the free *initiative* of commanders and subordinates at all levels.[62] The lowest tactical commanders were expected to take decisive action, even if that action meant changing the original plan, as long as the decision was guided by the higher commander's intent.[63] Moltke emphasized that the advantage of a situation would never be fully utilized if subordinate commanders waited for orders. Only if commanders at all levels were competent for and accustomed to independent action would the possibility exist of moving large masses with ease.[64] He wrote that in time of peace, the habit of acting according to correct principles can be learned only if every officer is allowed the greatest possible independence. In doubtful cases and in unclear situations, which occur often in war, it will generally be more advisable to proceed actively and keep the initiative than to await the law of the opponent.[65]

subordinate tactical commanders should be able to read the higher commander's intent quickly and fully understand it

The operational commander should not normally tell subordinate tactical commanders how to implement his intent.[66] However, he must ensure that they clearly *understand* his intent. The potential for misunderstanding is rather great when the operational commander and his subordinate commanders do not agree or are unaware that they disagree on the pending course of action. Ideally, backbriefing and rehearsals would enhance understanding of the higher commander's intent.[67]

The commander's intent is an old and well-proven concept. In its essence, it is nothing more than the *desired effect* (advocates of effects-based operations should take note) that the commander wants to see upon the accomplishment of a given mission. The intent applies only to situations involving employment of one's forces in combat and not in routine actions in peacetime. The intent is an integral part and one of the key elements of the mission command. Hence, its success cannot be ensured without full observance of the tenets of the mission command. The intent cannot be used effectively in a highly centralized command and control, or if the higher commander either bypasses or constantly interferes with the decisions of subordinate commanders. Its importance is also relatively the greatest in land warfare. Yet its importance can be disregarded only at one's peril in naval or air warfare. The commander's intent is much more important at the operational level of command than at the tactical level. Although the U.S. military pays great attention to the commander's intent, at least in theory, this is not reflected in the format of the operation plans/orders. The traditional five-paragraph format should be revised by elevating the commander's intent above the mission. **JFQ**

Figure 2. Commander's Intent and Plan/Order Format

German format (*Reichswehr/Wehrmacht*)	U.S. 5-paragraph format	Proposed 7-paragraph format
■ Information on the enemy	1. Situation	1. Situation
■ Information on adjacent (friendly) forces	2. Mission	2. **Intent**
■ Intent (*Absicht*)	3. **Execution**	2a. General intent
■ Intelligence	3a. Intent	2b. Intent for Service/ functional component commanders
■ Missions to subordinate units	3b. Concept of operations	3. Mission
■ Location (combat post) of the commander	3c. Tasks	4. Execution
	3d. Coordinating instructions	4a. Concept of operations
	4. Administration and logistics	4b. Tasks
	5. Command and control	4c. Coordinating instructions
		5. Logistics
		6. Command and control
		7. Administration

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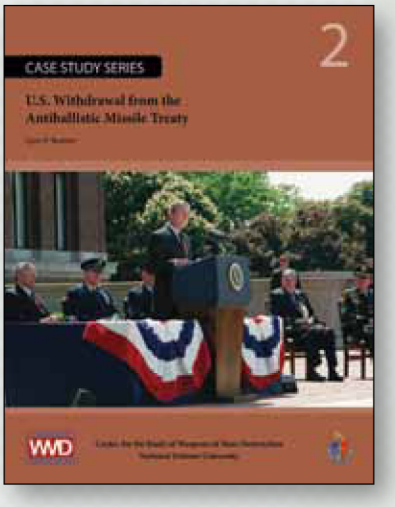

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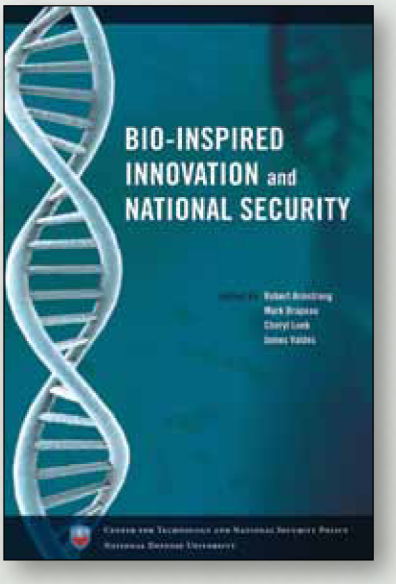

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